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LIST OF ACRONYMS

1122TECA 1,1,2,2-tetrachloroethane bgs Below Ground Surface

BTEX Benzene, Toluene, Ethyl benzene, Xylene

cPAHs Carcinogenic Polynuclear Aromatic Hydrocarbons

DRO Diesel Range Organics

EPA United States Environmental Protection Agency

GRO Gasoline Range Organics

gpm Gallons per minute

MDE Maryland Department of the Environment

μg/kg microgram per kilogram mg/kg milligram per kilogram

NGVD National Geodetic Vertical Datum

OCP MDE Oil Control Program

PVC Polyvinyl chloride

SVOC Semi Volatile Organic Compound
TPH Total Petroleum Hydrocarbons
USTs Underground Storage Tanks
VOC Volatile Organic Compounds

XRF X-ray fluorescence



EXECUTIVE SUMMARY

On December 18 and 26, 2002, Maryland Department of the Environment (MDE) conducted a Brownfields Assessment at the Property know as Site I, in Frederick County, Frederick, Maryland. This study was undertaken through the MDE Environmental Restoration and Redevelopment Program at the request of the City of Frederick. The City of Frederick acquired the former McHenry Auto Parts Store property (designated Site I) in 2002 as part of a development program and to create the East Street extension along the path of an old railroad spur that was no longer used. Prior to initiating the Brownfields Assessment, MDE conducted a file and map search to determine the historical use of the land and to create a workplan that outlined the site investigation methodology and objectives (MDE, December 2002).

The Site I property occupies a 1.3 acre parcel of land at the intersection of East Patrick and East Street in Frederick, Maryland. The former store building is currently used for storage and as a homeless shelter in winter months. The building is conjoined with the next-door property structure known as the Chicken Man property. Based on available records, the Chicken Man property was previously a gas/service station and convenience store. The Chicken Man property is a known contaminated site that has been impacted by leaking underground storage tanks (USTs) and other contaminant sources. MDE's Oil Control Program (OCP) previously operated a groundwater treatment system at the Chicken Man property. Groundwater treatment was terminated due to the expiration of the cleanup funding and contaminants such as petroleum hydrocarbons and naphthalene remain in the groundwater below the property.

As part of the Brownfields Assessment, MDE collected 15 soil samples (that includes one duplicate) and three groundwater samples. Soil samples were screened within the MDE soil laboratory and 40% of the samples were submitted to MARTEL Laboratories, Baltimore, Maryland, for confirmatory analyses. Three groundwater samples were collected from two monitor wells installed at the property and were submitted to MARTEL for analysis. Once the analytical data were received they were formatted and submitted to a State toxicologist for analysis.



Based on the Brownfields Assessment, elevated concentrations of metals, pesticides, and semi-volatile organic compounds (SVOCs) were detected within fill material below the parking lot on the northern and western sides of the building. These contaminants are not consistent with leaking USTs and do not match the contaminants observed at the next-door Chicken Man property. It is possible these contaminants are associated with the old railroad spur that once passed through the area or perhaps fill generated during the operation of an old Coal and Ice business that operated at the property prior to 1930.

During the installation of MW-1, seven drums of free product and groundwater were generated. A sample of the emulsion created by this mixture was submitted to MARTEL for analysis. Elevated levels of metals, SVOCs, and volatile organic compounds (VOCs) were detected within this sample. Based on the SVOCs detected within this sample, it appears that the free product may have originated from possibly creosote or coal gasification residuals. VOC samples collected from MW-1 and MW-2 contain gasoline derivative compounds (benzene, toluene, xylene) and are consistent with gasoline contamination from leaking USTs. Therefore the origin of the contaminants detected at MW-1 could reflect multiple sources, or types of source products, rather than simply leaking USTs that are known to have existed at the next door property.

Although the source of all the contaminants below the Site I property is not clear, the Brownfields Assessment indicates that the groundwater and soils below the property are clearly impacted. The toxicological assessment stated that VOCs and mercury are contaminants of concern. Groundwater use restrictions, further groundwater and soils investigation, and further delineation of mercury detections within the fill to the west of the property should be evaluated should development of the property be undertaken.

MDE believes that it would be in the best interest of all parties that potential buyers of Site I property consider entering the Maryland Voluntary Cleanup Program (VCP) prior to redevelopment of the property. By entering the VCP prior to buying or leasing the property, the prospective purchaser gains additional long-term liability protections as an "inculpable person" in regard to site contaminants in the future.



1.0 INTRODUCTION

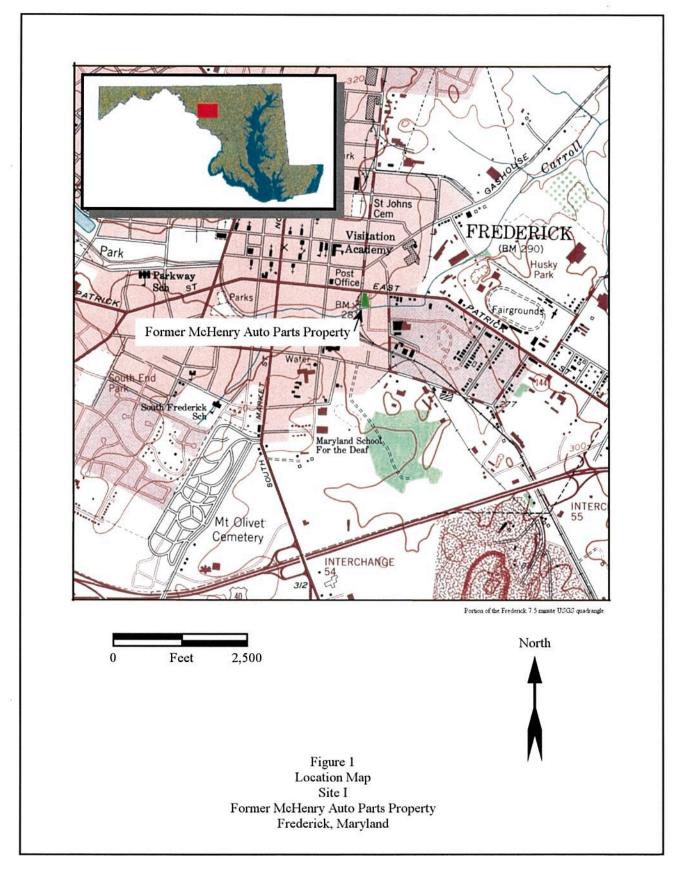
At the request of the City of Frederick, the Maryland Department of the Environment (MDE) has conducted a Brownfields Assessment at the former McHenry Auto Parts Store (Site I) within the City of Frederick. The purpose of this investigation is to determine past uses of the property, characterize ambient environmental conditions, and determine if there are any human health or toxicological risks due to previous site activities. This report outlines the findings of the Brownfields Assessment and a toxicological evaluation of the resultant data.

1.1 Current and Former Use

The Former McHenry Auto Parts Store (Site I) occupies a 1.3-acre parcel of property bisected by the East Street extension at the intersection of East Patrick Street and East Street in Frederick, Frederick County, Maryland (Figure 1). The facility is located within a commercial/residential area and is bounded by East Patrick Street to the north, Water Street to the west and Carroll Creek to the south. Prior to the construction of the East Street extension, an old railroad easement passed through the property. The surrounding property is within the City of Frederick and is a mixture of commercial, residential, government offices, and light industry. Several rejuvenation projects are being undertaken along Carroll Creek. These activities are to reuse old industrial/commercial properties and increase the aesthetic appeal of the area along Carroll Creek known as Carroll Park.

The City of Frederick constructed the East Street extension through the property, which created two sub-lots. The western parcel is a thin, approximately 6,000 sq. ft macadam-covered sliver that is part of the parking lot of the nursery located on the western corner of East Patrick Street and East Street. This parcel is under contract to be sold and is not included within this investigation. The eastern lot covers approximately 0.5 acre on which the two original bi-level masonry and frame buildings remain. The total area of these buildings is approximately 14,000 sq. ft. The buildings are currently used by the City of Frederick for storage as well as a homeless shelter in winter months.





One Sanborn fire insurance map was found for this area. Based on this 1930 map, the earliest confirmed usage of the property was as an auto repair and parts store. Previous edits noted on the Sanborn map indicate that the property was used by Old Hygeia Coal and Ice prior to use as an auto parts store. The 1930 Sanborn map indicates that a service station with a "filling" shed and "pumps" were immediately adjacent to the east. To the west side of the property was a railroad spur and siding that was used for freight service through the City of Frederick. The tracks and siding were abandoned and have been removed and the rail bed used for the East Street extension.

Based on a property appraisal (William G. Bowen, 2002) the property continued to be used as an auto parts and repair facility and was passed between several owners. The most recent acquisition of the auto repair and parts business was by John and Pat McHenry from Mr. Irving A. Abb in 1969. The McHenry's continued to operate the business at East Patrick Street until 1998 when the City of Frederick purchased the property.

A review of the available files indicates that residual contamination from previous operations next door to Site I currently exists. There have been no previous investigations at Site I. MDE has identified the adjoining Chicken Man property as having subsurface gasoline contamination that is due to leakage from a former UST. Elevated levels of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, and methyl tertiary butyl ether (MTBE) have been detected. Monitoring wells continue to indicate contamination on the adjoining property.

1.2 Potential Future Use

Possible future use includes commercial/residential usage. Industrial or open space land use is not likely due to the residential/commercial/recreational land use of the surrounding areas.



2.0 ENVIRONMENTAL SETTING

The following section presents the physical setting of the facility. This discussion is based on a file review of previous investigations, a site visit, and data generated during the Brownfields Assessment subsurface investigation.

2.1 Topography/Geology/Hydrogeology

Site I is located on the central portion of the Frederick 7.5 minute topographic map (Figure 1). The facility lies on a flat terrace approximately 300-feet above national geodetic vertical datum (NGVD). Surrounding areas are moderately incised by first and second order tributaries of the Monocacy River creating moderate relief and rolling hills. Carroll Creek is immediately south of Site I. However, this creek has been channelized for flood control and is actually higher than portions of the property.

Frederick is situated within the western division of the Piedmont physiographic province. This area has moderate relief and gently rolling slopes that contains the low-lying Frederick Valley. Site I is underlain by the Cambrian-age Frederick Limestone. The Frederick Limestone is a thin-bedded dark blue limestone with dark argillaceous partings and is up to 500 feet thick. Drilling logs in the area indicate that the limestone bedrock is overlain by fill and sandy gray clay. Overburden thickness ranges from 10 to greater than 20 feet. Water-filled solution cavities have been recorded in drilling logs in the area.

An environmental investigation was conducted at the adjacent Chicken Man property. During this investigation, a single water table aquifer was mapped below the site (Handex, 1989). Groundwater occurs within native discontinuous gravel layers and the fill material below the site. Groundwater is typically 6 to 15 feet below ground surface (bgs) and flows to the southeast towards Carroll Creek. Although Carroll Creek is channelized, an underlying conduit reportedly collects subsurface flow.

The Frederick Limestone is an important water-bearing unit in the area. A large number of commercial, residential, and farm wells tap this aquifer. Yields from less than 1 gallon per minute (gpm) up to 275 gpm are recorded (The Water Resources of Carroll and Frederick County, 1958). Yields from on-site wells are generally low, on the order of one gallon per minute and less.

A well search was conducted using the MDE well database. This search returned 51 wells within a half-mile area surrounding site I. However, the wells recorded within the area are almost exclusively shallow (5 to 34 feet) monitor wells, not potable water wells. The historic use of downtown Frederick for industrial and transportation purposes has impacted the shallow groundwater to the point that it is unreliable as a source for potable water.

Over the years, the area around Site I has undergone significant modification. To the west, the East Street Extension was put in. This required filling and regrading the area to reconstruct a railroad bridge across Carroll Creek for automobile and pedestrian traffic. Carroll Creek itself has undergone a major flood control project. As part of this project two 48-inch pipes were installed below Carroll Creek to carry the flow below ground surface. The visible creek contains a fraction of the creek flow that has been channelized to provide aesthetic value to the Carroll Creek park within the city. This work has resulted in a cut and fill within the back portions of the property. Subsurface investigations confirm the presence of fill below the parking lots and rear yard.

MDE installed two monitor wells and drilled eight shallow soil borings during the Brownfields Assessment. The shallow soil borings extended to a depth of six feet below ground surface and monitor wells were installed to 24 and 26 feet. Fill below the northern and western parking lots contains a mixture of dark colored sand, silt, clay, bricks, and cinders that exude strong petroleum odors in places. This fill is generally five feet (or greater) in thickness. The fill within the back of the building appears to be cleaner silty sand, silty clay materials with no observed odors. In general, the fill appears to be thickest along the northern and western property boundaries.

Bedrock was encountered at approximately 18 to 26-ft below ground surface. At MW-1, drilling progressed through 17 feet of unconsolidated overburden and encountered a limestone layer at approximately 17 ft bgs. Drilling was switched to downhole hammer and proceeded for another



two feet before a solution cavity or a highly weathered zone was encountered. Drilling continued to 30 feet, although logging the hole was difficult due to a combination of water and free product evacuated from the zone below 17 ft by the air stream. In all, seven drums were filled to containerize the waste before setting the well screen from 26.5 to 16 feet bgs. Drilling at MW-2 encountered bedrock at approximately 26.5 ft bgs. MW-2 is slightly lower in elevation than is MW-1. The absence of bedrock prior to 26.5 ft bgs suggests that the rock layer encountered in MW-1 at 17 feet bgs is an erosional remnant within the overburden. Pinnacling and other such erosional features are common in limestone terrains such as that found at Frederick Site I. Although some free product was recorded at 25 ft bgs in MW-2, the volume of water and waste was not as great as that encountered in MW-1. However, downhole hammer drilling was not used at MW-2 so that waste generation would be minimized. Therefore complete conclusions regarding the actual contents encountered cannot be provided.

2.2 Surface Water

The facility is situated on a flat terrace adjacent to Carroll Creek. However, as previously indicated, Carroll Creek has undergone a significant flood protection program that channelized stream flow below ground surface. Stream flow within the visible Carroll Creek is controlled upstream and does not receive water from surface runoff within the area of its channelization within the town of Frederick. Surface water runoff from the facility is instead captured by an integrated storm water runoff system or infiltrates into the ground at a low point behind the property that is lower than Carroll Creek. There are no surface water bodies such as storm water retention basins, ponds, or creeks on the facility property.



3.0 DESCRIPTION OF INVESTIGATION

The following section details the Brownfields Assessment that was conducted at Site I. The results of this investigation are detailed in Section 4.0. Hard copy of the analytical results are provided in Attachment A, boring log and well construction data in Attachment B, a toxicological risk assessment within Attachment C, results of a well search in Attachment D, site photographs within Attachment E, and results of a regression analysis in Attachment F.

3.1 Soil and Groundwater Sampling

The approach to this site characterization was to collect evenly distributed environmental samples from soil and groundwater throughout the site, perform field screening analyses on soil samples, and submit all groundwater and a subset of the soil samples to a fixed laboratory for analysis. Particular parameters have been selected for each sample based on known or potential contamination. Figure 2 shows the sampling locations.

3.1.1 Soil Sampling

Fourteen soil samples (plus one duplicate) were collected at seven on-site locations (Figure 2, Table 1). All samples were analyzed using X-ray fluorescence (XRF) for metals and immunoassay field screened for total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), and carcinogenic polynuclear aromatic hydrocarbons (cPAHs) as shown in Table 2. Based on field screening results, 40% of the samples (6) were submitted for fixed lab [MARTEL Laboratories, Baltimore, MD] confirmation. However, 11 soil samples were directly to MARTEL for VOC analysis. Soil samples submitted to MARTEL and analytical parameters requested are presented in Table 3.

Soil samples were collected at surface (0-1.0) and subsurface depths (4-5) to measure the concentration of contaminants the general public is most likely to come in contact with. One sample was planned to be collected from beneath the building foundation. However, due to the low ceiling



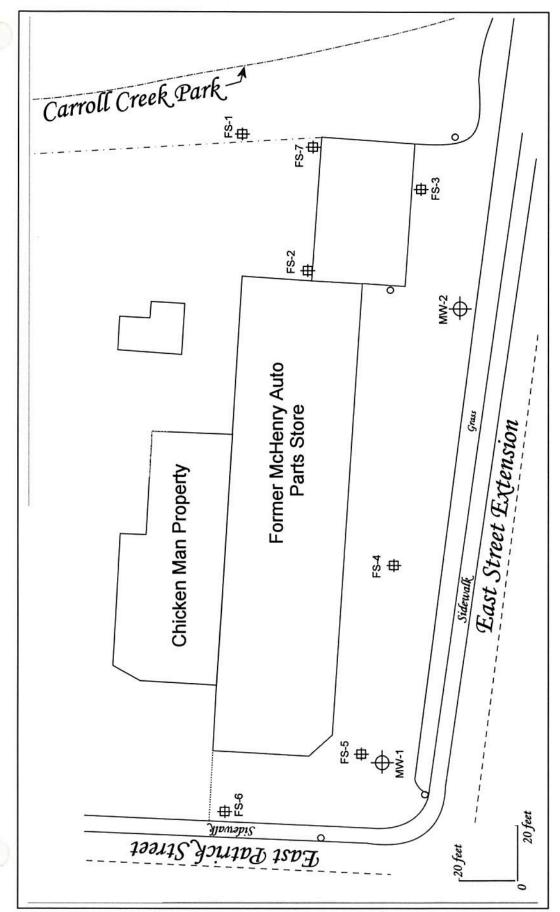


Figure 2
Sample Location Map
Site I
Former McHenry Auto Parts Property
Frederick, Maryland



Table 1 Soil Samples Frederick, Site I Frederick, Maryland

| Sample | Depth (ft BGS) | Sample | Depth (ft BGS) |
|--------|----------------|--------|----------------|
| FS-1 | 0-1 | FS-5 | 0-1 |
| FSS-1 | 4-5 | FSS-5 | 4-5 |
| FS-2 | 0-1 | FS-6 | 0-1 |
| FSS-2 | 4-5 | FSS-6 | 4-5 |
| FS-3 | 0-1 | FS-7 | 0-1 |
| FSS-3 | 4-5 | FSS-7 | 4-5 |
| FS-4 | 0-1 | FS-8 | 0-1 |
| FSS-4 | 4-5 | FSS-8 | 4-5 |

Table 2
Field Screening Parameters
Frederick, Site –I
Frederick, Maryland

| Sample ID | Matrix | XRF Metals | IM CPAHs | IM PCBs** | IM BTEX |
|-----------|--------|---------------|----------|-----------|---------|
| FS-1 | Soil | X | X | X | |
| FSS-1 | Soil | X | X | X | |
| FS-2 | Soil | X | X | X | |
| FSS-2 | Soil | X | X | X | |
| FS-3 | Soil | X | X | X | |
| FSS-3 | Soil | X | X | X | |
| FS-4 | Soil | X | X | X | |
| FSS-4 | Soil | X | X | X | |
| FS-5 | Soil | X | X | X | |
| FSS-5 | Soil | X | X | X | |
| FS-6 | Soil | X | X | X | |
| FSS-6 | Soil | X | X | X | |
| FS-7 | Soil | X | X | X | |
| FSS-7 | Soil | X | X | X | |
| FS-8* | Soil | X | X | X | |

^{*}FS-8 duplicates FS-7

^{**}PCBs = polychlorinated biphenyl's



Table 3
Fixed Lab Parameters
Frederick, Site –I
Frederick, Maryland

| | | | | ANALYS | SIS | |
|-----------|--------|------|-------|--------|----------------|----------|
| Sample ID | Matrix | VOCs | SVOCs | Metals | Pesticides/PCB | DRO/GRO* |
| FSS-1 | Soil | X | X | | X | X |
| FS-2 | Soil | X | | | | |
| FSS-2 | Soil | X | | | | |
| FS-3 | Soil | | X | X | X | |
| FSS-3 | Soil | X | | | | |
| FS-4 | Soil | X | | X | | |
| FSS-4 | Soil | X | X | X | X | X |
| FSS-5 | Soil | X | | | | |
| FS-6 | Soil | X | | | | |
| FSS-6 | Soil | X | X | | X | X |
| FS-7 | Soil | | X | X | X | X |
| FSS-7 | Soil | X | | X | | |
| FS-8 | Soil | | X | X | X | X |
| FSS-8 | Soil | X | | | | |

^{*}DRO/GRO = Diesel range and gasoline range organics

of the building, drilling equipment could not be moved in to access this area. Therefore the sample location (FS-7) was moved to just outside the garage area. Borings were advanced using a standard geoprobe drill rig and a continuous soil profile was recorded. In general, lithologic samples were obtained from 4 foot continuous core intervals. Geologic classification and field screening and observations were recorded for most of the boring locations. However boring logs were not recorded at two locations (FS-7 and FS-3) and noteworthy materials (odorous fill, unusual lithology) were not encountered at these locations (Attachment B).

3.1.2 Monitor Well Installation

Previous investigations near Site I indicate that groundwater occurs within the fill below the site and within the shallow limestone bedrock. Yields from these wells are generally low. Therefore direct-push technology was not considered to be a reliable method for collecting sufficient volumes of water for the desired analyses. Because characterizing the groundwater is an important part of this investigation, the installation of monitoring wells was chosen.



Monitor wells MW-1 and MW-2 were installed using an Air-Hammer rig. Boring logs and well installation details are provided in Attachment B. At MW-1, free product was encountered at 17 ft bgs. Drilling was advanced to 30 feet, which was the target depth for the location. While removing the tools from the hole, the hole collapsed to 26 feet and approximately seven drums of groundwater and free product waste were generated. A 4-inch diameter, 0.02-inch slot polyvinyl-chloride (PVC) well screen was set from 26.5 to 16.5 ft bgs. Filter sand was placed in the annular space from 26.5 feet to 3 feet bgs followed by a cement collar and flush mount protective cap. At MW-2, the downhole hammer was not used to limit the production of liquid wastes. Drilling proceeded with an 8-inch auger until bedrock was encountered (26.5 ft bgs) and the well was set at 16 to 26 ft bgs. A 4-inch diameter, 0.02-inch slot polyvinyl-chloride (PVC) well screen was set from 26 to 16 ft bgs. Filter sand was placed in the annular space from 26.5 feet to 3 feet bgs followed by a cement collar and flush mount protective cap.

Following well installation each well was developed for 1 hour to remove standing water and any drilling materials that were introduced.

3.1.3 Groundwater Sampling

Groundwater was collected from two on-site locations (Figure 2) in the shallow aquifer at two monitor wells installed during the project. Groundwater samples were reduced from the number planned (three) due to the large quality of free product and contaminated water generated during the installation of MW-1. Provisions and costs for containerizing the purge water, impacted with free product, were not allowed for during project planning. Therefore, groundwater samples were collected from the drummed waste and are considered to indicate the most impacted conditions within the shallow aquifer below the site. In addition, two VOC samples were collected from the standing water within MW-1 and MW-2. No purging was performed, therefore these samples could be subject to concentration reductions due to VOC volatilization as the water stood within the well. Samples were analyzed for the parameters indicated in Table 4.

Table 4 Groundwater Fixed Lab Parameters Frederick, Site –I

| | | | | ANALYSI | S | |
|------------|--------|-----|-------|---------|----------------|---------|
| Sample ID | Matrix | VOC | SVOCs | Metals | Pesticide/PCBs | DRO/GRO |
| MW-1 | GW | X | | | | |
| MW-2 | GW | X | | | | |
| MW-1-drum | GW | X | X | X | X | X |
| Trip Blank | W | X | | | | |



4.0 SAMPLING RESULTS

The following section presents the contamination assessment based on the sampling conducted on December 18 and 26, 2002. Field screening analyses were first conducted on the samples as previously described. Based on the results of the field screening soil samples were selected and submitted to MARTEL for analysis. Sample results were compared against MDE Cleanup Standards for Soil and Groundwater to determine if constituents were detected that exceeded these standards.

4.1 Field Screening Results of Soil Samples

Fourteen soil samples and one duplicate were submitted for field screening analysis at the MDE laboratory. Samples were screened for metals, pesticides/polychlorinated biphenyls(PCBs), and cPAHs.

4.1.1 Field Screening Metals Analysis

Field screening results for metals in soils are shown in Table 5. Based on this analysis the following metals (and their highest detected concentration in milligrams per kilogram (mg/kg)) were detected: silver (3.9), arsenic (17.35), barium (691.87), cadmium (2.74), calcium (18.93%), chromium (99.04), iron (4.99%), mercury (2.78), manganese (1,599.26), nickel (64.08), lead (2,391.59), antimony (10.14), selenium (1.65), thallium (1.77), vanadium (121.0), and zinc (434.98) were detected. Of the samples, only arsenic, lead, and mercury were detected above nonresidential state cleanup standards.

Of the detected metals, arsenic, barium, mercury, manganese, lead, and vanadium exceeded MDE Cleanup Standards for residential soils. The average arsenic detection is 8.93 mg/kg with a standard deviation of 4.92. The maximum detected concentration was in the sample FSS-6 at 17.36 mg/kg. The average barium detection is 447.1 mg/kg with a standard deviation of 141.9. The maximum barium detection is in sample FS-2. The average mercury detection is 2.56 mg/kg and a standard deviation of 0.311. The maximum mercury detection is also in sample FSS-6. The average manganese detection is 783.4 mg/kg with a standard deviation of 481.46. The maximum manganese



Table 5
Soil
Screening Analysis Results - Metals
Frederick, Site -I

| | AG | AS | BA | 8 | 8 | B | FE | HG | MN | Z | PB | SB | SE | IL | > | Z |
|-----------------|------|-------|-----------|--------|--------|---------------------------|-----------|-------|---------------------|-----------|----------------|-------|----------|-------|----------|---|
| Units | PPM | PPM | PPM | PPM | PPM | PPM | % | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM | PPM |
| FS-1 | 3.90 | 11.56 | 411.02 | ND | 94.02 | 67.80 | 3.63 | ND | 517.90 | 64.08 | 284.73 | 10.14 | N | 0.91 | 54.34 | 381.48 |
| FSS-1 | 1.50 | 6.39 | 433.71 | ND | 97.81 | 37.60 | 3.58 | ND | 326.58 | 25.81 | 91.56 | 3.39 | 0.61 | ND | 105.88 | 181.83 |
| FS-2 | ND | 8.07 | 691.87 | 1.63 | 86.49 | 32.15 | 4.79 | ND | 1,064.59 | 55.60 | 21.62 | 1.65 | 1.22 | ND | 86.20 | 10.76 |
| FSS-2 | ND | 4.054 | 534.70 | ND | 80.04 | 18.66 | 3.35 | ND | 182.79 | 17.92 | 15.87 | 1.45 | ND | 0.35 | 117.15 | 67.73 |
| FS-5 | ND | 10.18 | 570.38 | ND | 84.53 | 9.39 | 4.99 | 2.34 | 930.50 | ND | 327.37 | ND | ND | 0.32 | 106.17 | 85.26 |
| FSS-5 | 0.63 | 5.34 | 250.43 | 0.70 | 63.58 | 12.28 | 3.53 | ND | 1,599.26 | 17.14 | 19.54 | 3.13 | 1.39 | 0.39 | 91.95 | 61.55 |
| FS-3 | 3.63 | 16.17 | 228.97 | 0.46 | 99.04 | 50.11 | 2.56 | N | 461.29 | 18.57 | 75.21 | 2.28 | 0.71 | 0.55 | 46.56 | 260.24 |
| FSS-3 | 3.14 | 8.60 | 440.84 | 0.05 | 83.96 | 21.60 | 4.72 | N | 1,330.01 | 41.84 | 55.09 | ND | ND | 0.42 | 121.00 | 103.52 |
| FS-4 | ND | 15.54 | 575.31 | 2.74 | 91.95 | 103.15 | 3.80 | N | 653.08 | 54.54 | 261.21 | 9.79 | 1.65 | 0.23 | 100.87 | 434.98 |
| FSS-4 | ND | ND | 651.53 | 1.69 | 85.06 | 46.99 | 2.97 | N | 1,049.61 | 32.81 | 2,391.59 | 1.27 | ND | 1.77 | 76.45 | 182.20 |
| FS6 | 0.95 | 5.34 | 342.25 | 1.28 | 92.69 | 21.20 | 3.33 | ND | 1,466.37 | ND | 75.58 | 4.15 | ND | 0.58 | 99.76 | 67.91 |
| FSS-6 | ND | 17.35 | 345.87 | ND | 75.80 | 255.24 | 3.85 | 2.78 | 275.59 | ND | 19.56 | 0.45 | ND | ND | 114.21 | 71.21 |
| FS-7 | 1.62 | 2.125 | 338.61 | 0.49 | 52.55 | 14.04 | 1.65 | ND | 175.31 | 8.90 | 26.43 | 4.44 | 1.1 | ND | 77.73 | 56.03 |
| FSS-7 | 3.20 | 5.39 | 443.78 | 1.15 | 96.09 | 35.74 | 3.26 | ND | 934.21 | 16.34 | 128.96 | 0.27 | ND | 0.27 | 108.60 | 321.82 |
| | | | | | | | | | | | | | | | | |
| Maximum | 3.9 | 17.35 | 691.87 | 2.74 | 99.04 | 255.24 | 4.99 | 2.78 | 2.78 1,599.26 | 64.08 | 2,391.59 10.14 | 10.14 | 1.65 | 1.77 | 121.00 | 434.98 |
| Non-Residential | | | | | | | | | | | | | | | | |
| CC | 1000 | 3.8 | 14,000.00 | 100.00 | 00.019 | 610.00 8,200.00 61,000.00 | 61,000.00 | 0.12 | 41,000.00 41,000.00 | 41,000.00 | 400.00 | 82.00 | 1,000.00 | 14.00 | 1,400.00 | 82.00 1,000.00 14.00 1,400.00 61,000.00 |
| | | | | | | | | • • • | | | | | | | | |

Red text - Detection exceeds MDE non-residential cleanup criteria (exceeds residential is implied)



detection is in sample FSS-5. The average lead detection is 271.02 with a standard deviation of 619.52. The highest lead detection is in sample FSS-4. The average vanadium detection is 93.20 mg/kg with a standard deviation of 22.68. The highest detection is within sample FSS-3.

Based on the field screening results it appears there are elevated concentrations of metals. Although arsenic is a naturally occurring element within soils of Maryland, the sample with the highest concentration of arsenic (FSS-6) also has the highest detection of mercury. Other metals detections suggest that they are associated with deeper horizons within the fill material below the northern and western parking lot areas.

4.1.2 Field Screening PCB Analysis

PCB and cPAH field screening results are given in Table 6. PCBs were detected in every sample except FS-6. However, over half of the detections were below the calibration range of the instrument. The highest detection was observed in sample FSS-4 (710 μg/kg). The average detection (253 μg/kg) is below the State cleanup standard for total PCBs of 1 mg/kg for residential soils. Therefore field-screening analysis suggests PCBs are not a contaminant of concern in soils at Site I. Samples FSS-1, FS-3, Fss-3, FSS-4, FSS-6 and FS-7 were submitted to MARTEL for confirmatory analysis for PCBs.

The highest cPAH detection was observed in sample FSS-4 (17,520 μg/kg). The average detection is 5,415 μg/kg. However, the lowest cleanup level for any cPAH is that of benzo[a]pyrene which is 0.33 mg/kg. Because the average cPAH detection is above this individual compound, it is possible that cPAHs are a contaminant of concern in soil at Site I. Therefore samples from FSS-1, FSS-3, FSS-4, FSS-6, and FS-7 were submitted to MARTEL for confirmatory analysis.

Once again, the highest detections appear to be associated with the fill material along the northern and western parking lot areas. There is also a mild correlation between the cPAH results and PCB results.



Table 6
Screening Analysis Results – PCBs and cPAHs
Frederick, Site -I

| Sample ID | CPAHs (μg/kg) | PCBs (μg/kg) | |
|-----------|------------------|-----------------|---|
| FS-1 | 1144 | 140 | 2 |
| FSS-1 | 2272 | 140 | 2 |
| FS-2 | 272 | 120 | 2 |
| FSS-2 | ND | 110 | 2 |
| FS-3 | 6656 | 260 | |
| FSS-3 | 2208 | 120 | 2 |
| FS-4 | 10480 | 340 | |
| FSS-4 | 17520 | 710 | |
| FS-5 | 9672 | 310 | |
| FSS-5 | 9480 | 220 | 2 |
| FS-6 | 4528 | ND | |
| FSS-6 | 5816 | 410 | |
| FS-7 | 80 | 220 | 2 |
| FSS-7 | 272 | 190 | 2 |

4.2 Fixed Laboratory Results of Soil Samples

Selected soil samples were delivered to MARTEL in Baltimore, Maryland, for analysis.

MARTEL analyzed for VOCs in addition to confirming the results of the field screening methods.

Complete laboratory data sets are provided in Attachment A. Detected contaminants are listed in the tables indicated. The results of the fixed laboratory analysis are discussed in this section.

4.2.1 Fixed Laboratory Metals Analysis

Fixed laboratory results for metals are presented in Table 7. Arsenic and mercury were detected above non-residential MDE cleanup standards in all five samples and one duplicate (Table 7, red text). Chromium exceeded residential MDE cleanup standards for hexavalent chromium in sample FS-3, only, and manganese exceeded residential MDE cleanup standards in all samples except FS-3 (Table 7, blue text). The average arsenic concentration is 10.5 mg/kg with a standard deviation of 3.14. The average mercury concentration is 0.77 mg/kg with standard deviation of 0.46.



Based on a regression analysis of data the metals data, there is poor correlation between the field screening and Martel analyses ($R^2 < 0.7$) at the level of concentration detected (Attachment F). Therefore a linear probabilistic model cannot be used to predict the field screening results based upon fixed lab results. However, on average, the field screening results are typically higher than those of the fixed lab. Regardless of these discontinuities, the detection of elevated mercury and lead concentrations in each data set indicate some impact. These collective data suggest that the subsurface is impacted by elevated concentrations of heavy metals, in particular, arsenic, lead, and mercury. Although there are detections within samples collected at the rear of the property, the highest detections appear to be below the parking lot areas on the north and western portions of the property.

Table 7
Soil
MARTEL Results - Metals
Frederick, Site -I

| Metal | Units | Maximum | Non-Residential Cleanup Criteria | FS-3 | FS-4 | FSS-4 | FS-7 | FSS-7 | FS-8 |
|-----------|-------|---------|--|------|--------|-------|-------|-------|-------|
| Arsenic | mg/kg | 14 | 3.8 | 5 | 11 | 14 | 13 | 10 | 10 |
| Beryllium | mg/kg | 1.3 | 410 | 1.3 | < 0.06 | 1.2 | 0.82 | 1.2 | 0.98 |
| Cadmium | mg/kg | 0.96 | 100 | 0.1 | 0.4 | 0.13 | 0.96 | 0.96 | 0.59 |
| Chromium | mg/kg | 26 | 100 | 26 | 11 | 20 | 13 | 18 | 20 |
| Copper | mg/kg | 65 | 8,200 | 21 | 39 | 23 | 41 | 65 | 37 |
| Lead | mg/kg | 190 | 400 | 13 | 190 | 110 | 170 | 86 | 126 |
| Manganese | mg/kg | 1,500 | 4,100 | 160 | 300 | 1,000 | 280 | 1,500 | 550 |
| Mercury | mg/kg | 1.5 | 0.12 | 0.27 | 1.5 | 1.1 | 0.62 | 0.71 | 0.41 |
| Nickel | mg/kg | 24 | 4,100 | 24 | <0.2 | 8.8 | 9.6 | 10 | 9.5 |
| Selenium | mg/kg | 1.9 | 1,000 | <0.6 | 1.9 | 0.6 | 0.77 | <0.6 | <0.7 |
| Silver | mg/kg | 0.4 | 1,000 | 0.4 | <0.1 | 0.17 | <0.1 | <0.1 | 0.24 |
| Thallium | mg/kg | 0.29 | 14 | 0.22 | <0.2 | <0.3 | <0.29 | < 0.3 | < 0.3 |
| Zinc | mg/kg | 270 | 61,000 | 54 | 190 | 73 | 250 | 270 | 220 |

RED text - Detection exceeds MDE non-residential cleanup criteria (exceeds residential is implied).

BLUE text - Detection exceeds MDE residential cleanup criteria.



4.2.2 Fixed Laboratory Pesticides and PCB Analysis

Pesticides were detected within three of the six samples submitted for analysis (Table 8). The highest detections were all within sample FSS-4. However, all were below MDE cleanup criteria. The detections within FSS-4 are coincident with elevated detections of lead. FSS-4 is located on the western side of the property and is covered with macadam. The presence of pesticides and other contaminants in this area could be due to the old railroad tracks and siding that were once in this area or due to historical uses of pesticides by the property owners.

PCBs were not detected within any soil sample submitted for confirmatory analysis. It is possible that the PCBs detected using field screening techniques were the result of elevated organics compounds (pesticides, SVOCs) within the soils and not due to PCBs themselves. PCBs are not believed to be a contaminant of concern at this property.

Table 8
Soil
MARTEL Results - Pesticides
Frederick, Site -I

| | Units | Maximum | Cleanup Criteria | FSS-1 | FS-3 | FSS-4 | FSS-6 | FS-7 | FS-8 |
|--------------------|-------|---------|------------------|-------|------|-------|-------|------|------|
| 4,4'-DDD | μg/kg | 67 | 24,000 | <12 | <12 | 67 | <13 | <13 | <13 |
| Dieldrin | μg/kg | 15 | 360 | <12 | <12 | 15 | <13 | <13 | <13 |
| Endosulfan II | μg/kg | 34 | 1,200,000 | <12 | <12 | 34 | <13 | <13 | <13 |
| Endosulfan Sulfate | μg/kg | 11 | 1,200,000 | <12 | <12 | 11 | <13 | <13 | <13 |
| Endrin Aldehyde | μg/kg | 17 | 61,000 | <12 | <12 | 17 | <13 | <13 | <13 |
| Heptachlor Epoxide | μg/kg | 17 | 630 | <12 | <12 | 17 | <13 | <13 | <13 |
| Methoxychlor | μg/kg | 590 | 1,000,000 | <12 | <12 | 590 | <13 | 65 | 74 |

4.2.3 Fixed Laboratory SVOC Analyses

Semi-volatile organic compounds were detected within five of the six samples submitted for analysis. This confirms the field screening method that indicated cPAHs occurred within soil samples collected at Site I. Of the twenty SVOCs detected (Table 9), seven (Benzo[a]anthracene, 70,000 μg/kg, Benzo[b]fluoranthene, 41,000 μg/kg, Benzo[k]fluoranthene, 51,000 μg/kg, Indeno-(1,2,3-cd)-pyrene, 44,000 μg/kg, Dibenz[a,h]anthracene, 8,800 μg/kg, Pyrene, 260,000 μg/kg, and Benzo[a]pyrene, 120,000 μg/kg) exceeded MDE cleanup criteria for residential soil (Table 9, blue and red text). Of these, five (Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[a]pyrene,



Dibenz[a,h]anthracene and Indeno-(1,2,3-cd)-pyrene, 44,000 μg/kg) also exceeded MDE cleanup criteria for non-residential soil (Table 9, red text).

The majority of the detections were recorded within sample FSS-4. This is also the location at which field screening indicated the highest cPAH detections suggesting reasonable correlation between the field screening and laboratory results. These detections suggest that residual traces of SVOCs are found within the fill and underlying soils at the Site I property. The origin of these materials could possibly be due to the old railroad spur that existed in this area or the old Hygeia Coal and Ice company that was located here prior to 1930.

Table 9 Soil MARTEL Results - SVOCs Frederick, Site -I

| | units | Maximum | MDE Non-Residential Cleanup Criteria | FSS-1 | FS-3 | FSS-4 | FSS-6 | FS-7 | FS-8 |
|------------------------------|-------|---------|---|-------|------|---------|-------|-------|-------|
| Acenaphthene | μg/kg | 6,400 | 12,000,000 | <588 | <595 | 6,400 | <641 | <658 | <658 |
| Acenaphthylene | μg/kg | 21,000 | 12,000,000 | <588 | <595 | 21,000 | <641 | <658 | <658 |
| Anthracene | μg/kg | 31,000 | 61,000,000 | <588 | <595 | 31,000 | <641 | <658 | <658 |
| Benzo[a]anthracene | μg/kg | 70,000 | 7,800 | 2,000 | <595 | 70,000 | <641 | <658 | 600 |
| Benzo[b]fluoranthene | μg/kg | 41,000 | 7,800 | 1,400 | <595 | 41,000 | <641 | <658 | 1,000 |
| Benzo[k]fluoranthene | μg/kg | 51,000 | 78,000 | 1,600 | <595 | 51,000 | <641 | <658 | 1,100 |
| Benzo[a]pyrene | μg/kg | 120,000 | 780 | 2,300 | <595 | 120,000 | <641 | <658 | 1,000 |
| Chrysene | μg/kg | 78,000 | 780,000 | 2,300 | <595 | 78,000 | <641 | 830 | 1,800 |
| Fluorene | μg/kg | 14,000 | 8,200,000 | <588 | <595 | 14,000 | <641 | <658 | <658 |
| Dibenz[a,h]anthracene | μg/kg | 8,800 | 780 | <588 | <595 | 8,800 | <641 | <658 | <658 |
| Benzo[g,h,i]perylene | μg/kg | 81,000 | 6,100,000 | 1500 | <595 | 81,000 | <641 | <658 | 1000 |
| Pyrene | μg/kg | 260,000 | 6,100,000 | 3,100 | <595 | 260,000 | <641 | 1,700 | 3,400 |
| Fluoranthene | μg/kg | 105,000 | 8,200,000 | 2,200 | <595 | 105,000 | <641 | 1,400 | 3,200 |
| Bis-(2-ethylhexyl)-phthalate | μg/kg | 1,400 | 410,000 | 1,200 | <595 | 1,000 | 1,400 | <658 | <658 |
| Hexachlorocyclopentadiene | μg/kg | 0 | | <588 | <595 | <641 | <641 | <658 | <658 |
| Indeno-(1,2,3-cd)-pyrene | μg/kg | 44,000 | 7,800 | 1,200 | <595 | 44,000 | <641 | <658 | 790 |
| 2-Methylphenol | μg/kg | 0 | | <588 | <595 | <641 | <641 | <658 | <658 |
| 2-Methylnaphthalene | μg/kg | 17,000 | 4,100,000 | <588 | <595 | 17,000 | <641 | <658 | <658 |
| N-Nitroso-di-N-propylamine | μg/kg | 0 | | <588 | <595 | <641 | <641 | <658 | <658 |
| Phenanthrene | μg/kg | 180,000 | 61,000,000 | <588 | <595 | 180,000 | <641 | 1,600 | 3,200 |

RED text - Detection exceeds MDE non-residential cleanup criteria (exceeds residential is implied).

BLUE text - Detection exceeds MDE residential cleanup criteria.



4.2.4 Fixed Laboratory VOC and DRO/GRO Analysis

Table 10 lists the VOCs detected in the soil samples submitted for analysis. Eight VOC compounds were detected within soil samples collected at Site I. However, there were no detections that exceeded MDE cleanup requirements for residential or non-residential soils. One compound, dichloromethane (methylene chloride) was detected in eight of the eleven samples submitted. Methylene chloride is a known lab contaminants and is not believed to be a contaminant of concern at Site I. The majority of VOC detections were recorded at FSS-4, which is coincident with the majority of SVOC and pesticides detections. Benzene, ethylbenzene, isopropylbenzene, styrene, and toluene were all detected within FSS-4. These compounds are associated with petroleum products and could be associated with the releases recorded at the Chicken Man property. The elevated concentrations of multiple contaminants could also indicate a different source, possibly associated with the old railroad spur that passed near the FSS-4 location.

One chlorinated VOC, 1,1,2,2-tetrachloroethane (1122TECA) was detected within one soil sample. 1122TECA was detected within soil sample F22-7 (6.7 µg/kg) and the duplicate FSS-8 (6.9 µg/kg). This particular compound is not as widely used as other cleaners and degreasers such as tetrachloroethene and trichloroethene. The sample location FSS-7 is located immediately next to the corner of the building and garage door. It is possible that 1122TECA was used within the auto service business and disposed of in this area. The low concentrations and limited occurrence of 1122TECA do not warrant assuming TECA to be a contaminant of concern at the Site I property at this time.

Diesel range organics and gasoline range organics (DRO/GRO) were detected in all five samples for which it was analyzed. The highest DRO detection was recorded in sample FSS-6 (1,500 mg/kg) and the highest GRO detection was within sample FSS-4 (54 μ g/kg). Each sample exhibited a distinct petroleum odor when they were collected. Due to the wide spread occurrence of petroleum impacted groundwater and soil at the next door Chicken Man property, DRO and GRO are believed to relevant contaminants of concern at the Site I property.



Table 10
Soil
MARTEL Results - VOCs
Frederick, Site -I

| Analyte | units | Maximum | Cleanup Criteria | FSS-1 | FS-2 | FSS-2 | FSS-3 | FS-4 | FS-4 FSS-4 FSS-5 | FSS-5 | FS-6 | FSS-6 | FS-7 | FSS-7 | FS-8 | FSS-8 |
|---------------------------|-------|---------|------------------|-------|------|-------|-------|------|------------------|-------|------|-------|------|-----------|------|----------|
| Benzene | ug/kg | 20 | 100,000 | 9> | 9> | 9> | 9> | 9> | 10 | 9> | 9> | 9> | Ę | ₽ | Ę | 7 |
| Dichloromethane | ug/kg | 53 | 260,000 | 9> | 15 | 20 | 12 | 25 | 9> | 10 | 16 | 9> | Ŕ | 32 | Ę | 53 |
| Ethylbenzene | ug/kg | 230 | 20,000,000 | 9> | 9> | 9> | 9> | 9> | 230 | 9> | 9 | 9 | ¥ | V | Ę | ₽ |
| Isopropylbenzene | ug/kg | 29 | 20,000,000 | 9> | 9> | 9> | 9> | 9> | <i>L</i> 9 | 9> | 9> | 9> | ¥ | ₽ | ¥ | ₽ |
| Styrene | ug/kg | 9.7 | 41,000,000 | 9> | 9> | 9> | 9> | 9> | 7.6 | 9> | 9> | 9> | ¥ | ₽ | Ę | ₽ |
| 1,1,2,2-Tetrachloroethane | ug/kg | 6.9 | 20,000 | 9> | 9> | 9> | 9> | 9> | 9> | 9> | 9> | 9> | ¥ | 6.7 | ĸ | 6.9 |
| Toluene | ug/kg | 51 | 41,000,000 | 9> | 9> | 9> | 9> | 9> | 51 | 9> | 9> | 9> | Ā | ₽ | ۲ | ₽ |
| Xylene, Total | ug/kg | 100 | 410,000,000 | 9> | 9> | 9> | 9> | 9> | 100 | 9> | 9> | 9> | IN | <i>\\</i> | Ϋ́ | ₽ |
| Diesel Range Organics | mg/kg | 1500 | NA | 150 | IN | NT | IN | TN | 450 | NT | IN | 1,500 | 47 | NT | 59 | Ā |
| Gasolina Ranga Organics | ma/ka | 24 | NA | 10 | TI | TIV | FI | TI | 77 | TI | 1 | 77 | 11 | TIL | 27 | E |



4.3 Fixed Laboratory Groundwater Results

Three groundwater samples and one trip blank were collected during the Brownfields Assessment as previously discussed. Groundwater samples are not subject to field screening, as are soil samples. Therefore water samples were submitted directly to MARTEL for analysis. Full laboratory reports are provided in Attachment A. Detected concentrations are listed in the referenced tables.

As previously discussed, three groundwater samples were originally scheduled to be collected. Due to the fact that free product was encountered during the drilling, purging and sampling of the wells was not undertaken. Instead, standing samples for VOCs were collected from MW-1 and MW-2 and a suite of samples were collected from the drummed wastes collected during the drilling of MW-1. The samples from the drums are believed to represent the worst of the groundwater conditions below Site I. The standing was VOC samples were collected to confirm the presence of contaminants within the groundwater.

Groundwater samples were collected on December 26, 2002. Upon arrival on site, MDE's OCP inspected MW-1 and MW-2 to evaluate the presence of free product. Upon opening each well a heavy gasoline odor was noted. Within each well, free product was present, although the thickness was less than ¼ of an inch. The following section discusses the results of the water sampling conducted at Site I.

4.3.1 Groundwater Total Metals

All metals tested for were detected within the water sample collected from MW-1-drum (Table 11). Although filtering was attempted, the thick viscosity did not allow the water and sludge to pass through. As such, this sample is not indicative of the dissolved metals within groundwater, but do indicate the metals present within an emulsion of water and free product present below the Site I.



4.3.2 Groundwater Pesticides and PCBs

Pesticides and PCBs were not detected within the waste sample drummed at MW-1. The pesticides detections with the fill material at FSS-4 appear to be limited to soil and not evidence of a source area that migrated to the shallow groundwater.

4.3.3 Groundwater SVOC analysis

Fifteen SVOCs were detected within the groundwater/waste mixture collected from MW-1. Each SVOC exceeded its respective cleanup criteria for Type I & II aquifers (Table 12). However, these results do not reflect SVOCs that are dissolved within groundwater. Rather, these results

Table 11 Groundwater MARTEL Results - Metals Frederick, Site –I

| | units | Maximum | Cleanup Criteria | MW-1 drum |
|-----------|-------|---------|---------------------|--------------|
| Arsenic | μg/L | 700 | 50 | 700 |
| Beryllium | μg/L | 170 | 4 | 170 |
| Cadmium | μg/L | 46 | 5 | 46 |
| Chromium | μg/L | 1,200 | 100 | 1,200 |
| Copper | μg/L | 2,100 | 1,300 | 2,100 |
| Lead | μg/L | 2,000 | 15 | 2,000 |
| Manganese | μg/L | 28,000 | 50 | 28,000 |
| Mercury | μg/L | 15 | 2 | 15 |
| Nickel | μg/L | 1,700 | 73 | 1,700 |
| Zinc | μg/L | 6,200 | 1,100 | 6,200 |

RED text – Detection exceeds MDE residential cleanup criteria for Type 1 and Type 2 aquifers.

indicate the potential source of contaminants that would dissolve within groundwater and migrate away from the site. Many of the SVOCs detected are representative of residual contaminants from coal gasification processes, creosote, or other wood preservative processes. Although some detected contaminants could be due to gasoline or fuel oil leakage migrating from the Chicken Man site as well. There is no historical indication of wood preserving or coal gasification operations at the Site I property, so off site origin and migration onto the site or sources associated with the old rail road spur that passed through the old site before it was subdivided for the East Street Extension are possibilities.



4.3.4 Groundwater VOC analysis

Elevated concentrations of VOCs were detected in all three groundwater samples submitted for analysis (Table 13). However, only benzene (9,600 μ g/L), ethylbenzene (5,700 μ g/L), isopropylbenzene (260 μ g/L), and toluene (3,400 μ g/L) exceeded MDE cleanup criteria for Type I and Type II aquifers. The standing was samples from MW-1 and MW-2 did not contain free product. Therefore these results indicate the dissolved contaminants within the groundwater. The constituents detected within the groundwater are representative of those that are associated with gasoline and other petroleum compounds such as those recorded at the Chicken Man property next door.

Table 12 Groundwater MARTEL Results - SVOCs Frederick, Site -I

| | units | Maximum | Cleanup Criteria | MW-1 drum |
|--------------------------|-------|---------|---------------------|-----------|
| Acenaphthene | μg/L | 510 | 37 | 510 |
| Acenaphthylene | μg/L | 62 | 37 | 62 |
| Benzo[a]anthracene | μg/L | 140 | 10 | 140 |
| Benzo[b]fluoranthene | μg/L | 58 | 10 | 58 |
| Benzo[k]fluoranthene | μg/L | 82 | 10 | 82 |
| Benzo[g,h,i]perylene | μg/L | 120 | 18 | 120 |
| Chrysene | μg/L | 140 | 20 | 140 |
| Dibenz[a,h]anthracene | μg/L | 20 | 10 | 20 |
| 2,4-Dimethylphenol | μg/L | 20 | 11 | 20 |
| Indeno-(1,2,3-cd)-pyrene | μg/L | 70 | 10 | 70 |
| 2-Methylnaphthalene | μg/L | 1,200 | 20 | 1,200 |
| Naphthalene | μg/L | 3,900 | 10 | 3,900 |
| Phenanthrene | μg/L | 1,400 | 180 | 1,400 |
| Phenol | μg/L | 20 | 2,200 | 20 |
| Pyrene | μg/L | 810 | 18 | 810 |
| DRO | Mg/L | 83 | | 83 |
| GRO | Mg/L | 120 | | 120 |

RED text – Detection exceeds MDE residential cleanup criteria for Type 1 and Type 2 aquifers.



Table 13 Groundwater MARTEL Results - VOCs Frederick, Site -I

| | | | Cleanup | | | |
|---------------------|-------|---------|----------|-------|-------|-----------|
| | units | Maximum | Criteria | MW-1 | MW-2 | MW-1 drum |
| Benzene | μg/L | 9,600 | 5 | 9,600 | 85 | 7,200 |
| 1,2-Dichloropropane | μg/L | 5 | 5.5 | 5 | <1 | <100 |
| Ethylbenzene | μg/L | 5,700 | 700 | 3,700 | 5,700 | 4,800 |
| Isopropylbenzene | μg/L | 260 | 66 | 110 | 260 | 140 |
| Toluene | μg/L | 3,100 | 1,000 | 3,100 | 230 | 1,100 |
| Xylene, Total | μg/L | 7,400 | 10,000 | 4,800 | 7,400 | 5,700 |

RED text – Detection exceeds MDE residential cleanup criteria for Type 1 and Type 2 aquifers.



5.0 TOXICOLOGICAL ASSESSMENT

A toxicological review of the environmental data was performed as part of the Brownfields Assessment. The results of this review are provided in Attachment C.

Noncarcinogenic risks estimated for the incidental ingestion of detected surface and subsurface soil contaminants, under a commercial future use scenario, were within MDE and EPA recommended risk levels for all commercial populations. Risks associated with the incidental ingestion of detected carcinogenic surface soil contaminants exceeded MDE recommended risk ranges for the child visitor commercial population. Carcinogenic risk estimates for incidental ingestion of detected surface soil contaminants were within MDE recommended risk ranges for the youth visitor, adult worker and construction worker commercial populations and EPA recommended risk ranges for all commercial populations. Risk estimates for the incidental ingestion of detected carcinogenic subsurface soil contaminants exceeded MDE recommended risk ranges for all commercial populations and EPA recommended risk ranges for the child visitor, youth visitor and adult worker commercial populations. Risks associated with the incidental ingestion of detected carcinogenic subsurface soil contaminants were within EPA recommended levels for the construction worker commercial population. The estimated noncarcinogenic and carcinogenic risk levels from the inhalation of detected volatiles and fugitive dust from surface and subsurface soils were within acceptable levels as recommended by EPA and MDE for all commercial populations. Risk estimates for dermal exposure to detected carcinogenic and noncarcinogenic surface soil contaminants were within MDE and EPA recommended levels for all commercial populations.

The estimated noncarcinogenic and carcinogenic risks from ingestion of detected groundwater exceeded MDE and EPA recommended levels for all commercial populations. Noncarcinogenic risk estimates from dermal contact with detected groundwater contaminants exceeded MDE recommended risk ranges for all commercial populations. Carcinogenic risks from dermal contact with detected contaminants in groundwater were within EPA recommended risk ranges for the child visitor and construction worker commercial populations. Three detected contaminants, benzene, ethylbenzene, and toluene exceeded their respective maximum concentration limits. Benzene

exceeded the AWQC for the protection of aquatic life (acute and chronic) and protection of human health through fish consumption.

No detected contaminant in groundwater exceeded a hazard index (HI) of I or a cancer risk of greater than I x 10-5 from vapor intrusion of volatiles to indoor air for commercial populations. Vapor intrusion risk estimates for one detected contaminant in soils, mercury, exceeded MDE and EPA recommended noncarcinogenic risk levels. No detected carcinogenic soil contaminants exceeded MDE or EPA recommended risk ranges for vapor intrusion of volatiles to indoor air for commercial populations.

Four detected groundwater contaminants exceeded their corresponding MDE groundwater cleanup standard, however, groundwater sampling was limited to VOCs only. Three detected surface soil contaminant exceeded the corresponding MDE non-residential soil cleanup standard and seven detected subsurface soil contaminants exceeded the corresponding MDE non-residential soil cleanup standard.



6.0 SUMMARY

Based on the Brownfields Assessment, elevated concentrations of metals, pesticides, and SVOCs were detected within fill material below the parking lot on the northern and western sides of the building. These contaminants are not consistent with leaking underground storage tanks (USTs) and do not match the contaminants observed at the next-door Chicken Man property. It is possible these contaminants are associated with the old railroad spur that once passed through the area or perhaps fill generated during the operation of an old Coal and Ice business that operated at the property prior to 1930.

During the installation of MW-1, seven drums of free product and groundwater were generated. A sample of the emulsion created by this mixture was submitted to MARTEL for analysis. Elevated levels of metals, SVOCs, and VOCs were detected within this sample. Based on the SVOCs detected within this sample, it appears that the free product may have originated from a source other than gasoline leaking from a UST, possibly creosote or coal gasification residuals. VOC samples collected from MW-1 and MW-2 contain gasoline derivative compounds (benzene, toluene, xylene) and are consistent with gasoline contamination from leaking USTS. Therefore multiple sources or source types are a possibility.

A well search was conducted using the MDE well database. This search returned 51 wells within a half-mile area surrounding site I. However, the wells recorded within the area are almost exclusively shallow (5 to 34 feet) monitor wells, not potable water wells. The historic use of downtown Frederick for industrial and transportation purposes has impacted the shallow groundwater to the point that it is unreliable as a source for potable water.

Although the source of all the contaminants below the Site I property is not clear, the Brownfields Assessment indicates that the groundwater and soils below the property are clearly impacted. The toxicological assessment stated that VOCs and mercury are contaminants of concern. Groundwater use restrictions, further groundwater and soils investigation, and further delineation of mercury detections within the fill to the west of the property should be evaluated should development of the property be undertaken.

MDE believes that it would be in the best interest of all parties that potential buyers of Site I property consider entering the Maryland Voluntary Cleanup Program (VCP) prior to redevelopment of the property. By entering the VCP prior to buying or leasing the property, the prospective purchaser gains additional long-term liability protections as an "inculpable person" in regard to site contaminants in the future.

7.0 REFERENCES

HANDEX Environmental Consulting services (HANDEX), October 1988. Boring log and groundwater quality data provided to MDE, Oil Control Program.

<u>The Water Resources of Carroll and Frederick Counties</u>, Department of Geology, Mines, and Water Resources, Joseph T. Singewald, Jr., Director Bulletin 22, Baltimore, Maryland, 1958.

ATTACHMENT A Analytical Results - MARTEL

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Sensible Scientific Solutions

Monday, January 13, 2003

Prepared expressly for:

State of Maryland - MDE

1800 Washington Blvd

Suite 625

Baltimore, Maryland 21230

Attention: Scott Morgan

Report for Lab No: 91236. Samples received by Martel.

Project Identification: Frederick - Site I

RECEIVED

FEB 0 4 2003

ERRP

| MARTEL NO. 91236 000001 FS | CLIENT S-6 | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 09:52 |
|--|-----------------|---|--------------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capillary | | | EPA 8260B | | | 12/20/2002 02:52 JKI |
| Acetone | ND | 110000000000000000000000000000000000000 | VI-1 1 1 1 1 1 1 1 | | | 1 |
| Benzene | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 02:52 JKI |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JK |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JK |
| 997 MAN TO THE POST OF THE POS | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Bromoform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Bromomethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 2-Butanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 02:52 JKL |
| Carbon disulfide | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Carbon tetrachloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Chlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Chloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Chloroform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Chloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| cis-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| cis-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Cyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Dibromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,2-Dibromoethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,2-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,3-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,4-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Dichlorodifluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,1-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,2-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,1-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Dichloromethane | ⁻ 16 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 02:52 JKL |
| 1,2-Dichloropropane | ND | ug/kg | EPA 8260B | 5 | J | 12/20/2002 02:52 JKL |
| Ethylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 2-Hexanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 02:52 JKL |
| sopropylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL 12/20/2002 02:52 JKL |



| MARTEL NO. 91236 000001 FS-6 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 09:52 |
|-------------------------------------|------------|-------------|------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Methyl Acetate ` | ND | ug/kg | EPA 8260B | | | 12/20/2002 02:52 JK |
| 4-Methyl-2-pentanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 02:52 JK |
| Methyl-t-butyl ether | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JK |
| Methylcyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Styrene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Toluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| trans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| trans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| 1,1,1-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| 1,1,2-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Trichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Trichlorofluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Vinyl chloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKI |
| Xylene, Total | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 02:52 JKL |
| Surrogate Spike | | | | | | 1. |
| 4 D | 7992 | | | | | 7. |
| 4-Bromofluorobenzene | 99 | % | EPA 8260B | | | 12/20/2002 02:52 JKL |
| Dibromofluoromethane | 71 | % | EPA 8260B | | | 12/20/2002 02:52 JKL |
| Foluene-d8 | 86 | % | EPA 8260B | | | 12/20/2002 02:52 JKL |
| Solids (Total) | 84 | % | EPA 160.3 | | | / / 12/19/2002 12:12 TB |
| MARTEL NO. 91236 000002 FSS-6 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| 91236 000002 FSS-6 Compound | Test Value | Test Unit | Method | Detection Limit | Flag | 12/18/2002 09:57 Analysis Date/Time/Initial |
| OC by GCMS Capillary | | | | | | |
| OC by GCIVIS Capillary | | | EPA 8260B | | | 12/20/2002 03:36 JKL |
| Acetone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 03:36 JKL |
| Benzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Bromoform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Bromomethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| -Butanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 03:36 JKL |
| Carbon disulfide | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| Carbon tetrachloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Chlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |

Martel Laboratories $_{\it JDS}$ Inc.



| MARTEL NO. 91236 000002 FS | CLIENT SS-6 | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 09:57 |
|-------------------------------------|----------------|-------------|------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Chloroethane | ND ND | ug/kg | EPA 8260B | | | 12/20/2002 03:36 JKI |
| Chloroform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| Chloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| cis-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| cis-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| Cyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| Dibromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKI |
| 1,2-Dibromoethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,2-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,3-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,4-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Dichlorodifluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,2-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Dichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,2-Dichloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Ethylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 2-Hexanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 03:36 JKL |
| Isopropylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Methyl Acetate | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 4-Methyl-2-pentanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 03:36 JKL |
| Methyl-t-butyl ether | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Methylcyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Styrene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Toluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| trans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| trans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1,1-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| 1,1,2-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Trichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Trichlorofluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Vinyl chloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Kylene, Total | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 03:36 JKL |
| Surrogate Spike | | | | | | 1 1 |
| 4-Bromofluorobenzene | 98 | % | EPA 8260B | | | / / 12/20/2002 03:36 JKL |



| MARTEL NO. 91236 | 000002 | FSS-6 | CLIENT | SAMPLE IDEN | NTIFICATION | | | Sample Date/Time |
|---------------------|---------------|--------|------------|-------------|-------------|-----------------|------|--------------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Dibromofluorome | thane | | 65 | | EPA 8260B | | | 12/20/2002 03:36 JKI |
| Toluene-d8 | | | 89 | % | EPA 8260B | | | 12/20/2002 03:36 JKI |
| | | | | | | | | |
| Solids (Total) | | | 81 | % | EPA 160.3 | | | / 12/19/2002 12:12 TE |
| Diesel Range Org | anics by GC | /FID | 1500 | mg/kg | EPA 8015M | 1 | | 12/23/2002 17:27 TEH |
| | | | | | | | | |
| | | | | | | | | / / |
| Gasoline Range (| Organics by (| GC-FID | J 7.7 | mg/kg | EPA 8015M | 1 | | 12/19/1902 13:12 SAK |
| | | | | - | | | | |
| | | | | | | | | / / |
| MARTEL NO. | | | | | | | | |
| | 000003 | FSS-5 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 10:25 |
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Ca | apillary | | | | EPA 8260B | | | 12/20/2002 04:20 JKL |
| A | | | | | | | | 11 |
| Acetone | | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 04:20 JKL |
| Benzene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Bromochlorometha | 1000000 | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Bromodichloromet | hane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Bromoform | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Bromomethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 2-Butanone | | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 04:20 JKL |
| Carbon disulfide | 1 | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Carbon tetrachlorid | le | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Chlorobenzene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Chloroethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Chloroform | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Chloromethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| is-1,2-Dichloroeth | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| is-1,3-Dichloropro | pene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Cyclohexane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ,2-Dibromo-3-chlo | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ibromochlorometh | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ,2-Dibromoethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ,2-Dichlorobenzen | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 3-Dichlorobenzen | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 4-Dichlorobenzen | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ichlorodifluoromet | hane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1-Dichloroethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 2-Dichloroethane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1-Dichloroethene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| ichloromethane | | J | 10 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 04:20 JKL |
| 2-Dichloropropane | | | ND | | | | | |



| MARTEL NO. 91236 000003 FSS-5 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 10:25 |
|-------------------------------------|------------|--------------|-------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | |
| Ethylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKI |
| 2-Hexanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 04:20 JKI |
| Isopropylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Methyl Acetate | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 4-Methyl-2-pentanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 04:20 JKL |
| Methyl-t-butyl ether | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Methylcyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Styrene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Toluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| trans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| trans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,1,1-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| 1,1,2-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Trichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Trichlorofluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Vinyl chloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Xylene, Total | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 04:20 JKL |
| Surrogate Spike | | | | | | 1 1 |
| | | | | | | 11 |
| 4-Bromofluorobenzene | 99 | % | EPA 8260B | | | 12/20/2002 04:20 JKL |
| Dibromofluoromethane | 63 | % | EPA 8260B | | | 12/20/2002 04:20 JKL |
| Toluene-d8 | 91 | % | EPA 8260B | | | 12/20/2002 04:20 JKL |
| Solids (Total) | 82 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| MARTEL NO. 91236 000004 FS-4 | CLIENT | SAMPLE IDENT | TIFICATION | | | Sample Date/Time 12/18/2002 11:04 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| /OC by GCMS Capillary | | | EPA 8260B | | | |
| | | | | | | 1.1 |
| Acetone | ND | ug/kg | EPA 8260B | 25 | ٠ | 12/20/2002 05:04 JKL |
| Benzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:04 JKL |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:04 JKL |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:04 JKL |
| Bromoform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:04 JKL |
| Bromomethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:04 JKL |
| -Butanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 05:04 JKL |

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| Carbon disulfide ND ug/kg EPA 8260B 5 12/20/C Carbon tetrachloride ND ug/kg EPA 8260B 5 12/20/C Chlorobenzene ND ug/kg EPA 8260B 5 12/20/C Chlorocethane ND ug/kg EPA 8260B 5 12/20/C Chloromethane ND ug/kg EPA 8260B 5 12/20/C Chloromethane ND ug/kg EPA 8260B 5 12/20/C Chloromethane ND ug/kg EPA 8260B 5 12/20/C Cis-1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/C cis-1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dibromochloromethane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dichloromethane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1, | Date/Time/Initia |
|--|----------------------|
| Carbon tetrachloride ND ug/kg EPA 8260B 5 12/20/// Chlorobenzene ND ug/kg EPA 8260B 5 12/20/// Chlorodehane ND ug/kg EPA 8260B 5 12/20/// Chlorodem ND ug/kg EPA 8260B 5 12/20/// Chloromethane ND ug/kg EPA 8260B 5 12/20/// Cis-1,2-Dichloroethene ND ug/kg EPA 8260B 5 12/20/// cis-1,2-Dichloropropene ND ug/kg EPA 8260B 5 12/20/// cyclohexane ND ug/kg EPA 8260B 5 12/20/// 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/// 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/// 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/// 1,2-Dibromochloromethane ND ug/kg EPA 8260B 5 12/20//// | 002 05:04 Jł |
| Chlorobenzene ND ug/kg EPA 8260B 5 12/20/C Chlorodethane ND ug/kg EPA 8260B 5 12/20/C Chloroform ND ug/kg EPA 8260B 5 12/20/C Chloromethane ND ug/kg EPA 8260B 5 12/20/C Cis-1,2-Dichloropthene ND ug/kg EPA 8260B 5 12/20/C cis-1,3-Dichloropropene ND ug/kg EPA 8260B 5 12/20/C Cyclohexane ND ug/kg EPA 8260B 5 12/20/C Cyclohexane ND ug/kg EPA 8260B 5 12/20/C Cyclohexane ND ug/kg EPA 8260B 5 12/20/C L,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/C L,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1,2-Dichlor | |
| Chloroethane | 002 05:04 JF |
| Chloroform ND ug/kg EPA 8260B 5 12/20// Chloromethane ND ug/kg EPA 8260B 5 12/20// cis-1,2-Dichloroethene ND ug/kg EPA 8260B 5 12/20// cis-1,3-Dichloropropene ND ug/kg EPA 8260B 5 12/20// Cyclohexane ND ug/kg EPA 8260B 5 12/20// 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20// 1,2-Dichloropthane ND ug/kg EPA 8260B 5 12/20// 1,3-Dichloropthane ND ug/kg EPA 8260B 5 12/20// 1,4-Dichloropthane ND ug/kg EPA 8260B 5 12/20// | 002 05:04 JF |
| Chloromethane | 002 05:04 JF |
| Cis-1,2-Dichloroethene | 002 05:04 JH |
| cis-1,3-Dichloropropene ND ug/kg EPA 8260B 5 12/20/C Cyclohexane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/C Dibromochloromethane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dibromochlane ND ug/kg EPA 8260B 5 12/20/C 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/C 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/C 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/C 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/C | 002 05:04 JH |
| Cyclohexane ND ug/kg EPA 8260B 5 12/20/1 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/2 Dibromochloromethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dibromoethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichlorobethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JF |
| 1,2-Dibromo-3-chloropropane ND ug/kg EPA 8260B 5 12/20/2 Dibromochloromethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dibromoethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 B 12/20/2 1,1-Dichloroptopane ND ug/kg EPA 8260B 5 B | 002 05:04 JH |
| Dibromochloromethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dibromoethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 B 12/20/2 Dichloropropane ND ug/kg EPA 8260B 5 B 12/ | 002 05:04 JH |
| 1,2-Dibromoethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichlorodifluoromethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloropethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloropethane ND ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropethane ND ug/kg EPA 8260B 5 12/20 | 002 05:04 JH |
| 1,2-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 Dichlorodifiluoromethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethene ND ug/kg EPA 8260B 5 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 8 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 8 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 5 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 <td>002 05:04 JH</td> | 002 05:04 JH |
| 1,3-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 Dichlorodifluoromethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 B 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 5 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 Jr |
| 1,4-Dichlorobenzene ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichlorodifluoromethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloropethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloropropane ND ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 5 12/20/2 1sopropylbenzene ND ug/kg EPA 8260B 5 12/20 | 002 05:04 JH |
| Dichlorodifluoromethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloropethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 5 12/20/2 1.Sopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl-2-pentanone ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 M | 002 05:04 JH |
| 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethane ND ug/kg EPA 8260B 5 B 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 < | 002 05:04 JH |
| 1,2-Dichloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1-Dichloroethene ND ug/kg EPA 8260B 5 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JH |
| 1,1-Dichloroethene ND ug/kg EPA 8260B 5 12/20/2 Dichloromethane 25 ug/kg EPA 8260B 5 B 12/20/2 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JH |
| Dichloromethane | 002 05:04 JH |
| 1,2-Dichloropropane ND ug/kg EPA 8260B 5 12/20/2 Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JH |
| Ethylbenzene ND ug/kg EPA 8260B 5 12/20/2 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 25 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JH |
| 2-Hexanone ND ug/kg EPA 8260B 25 12/20/2 Isopropylbenzene ND ug/kg EPA 8260B 5 12/20/2 Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 25 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 Jk |
| Suppropylbenzene | 002 05:04 JH |
| Methyl Acetate ND ug/kg EPA 8260B 5 12/20/2 4-Methyl-2-pentanone ND ug/kg EPA 8260B 25 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| 4-Methyl-2-pentanone ND ug/kg EPA 8260B 25 12/20/2 Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| Methyl-t-butyl ether ND ug/kg EPA 8260B 5 12/20/2 Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| Methylcyclohexane ND ug/kg EPA 8260B 5 12/20/2 Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| Styrene ND ug/kg EPA 8260B 5 12/20/2 1,1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| 1,1,1,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| 1,1,2,2-Tetrachloroethane ND ug/kg EPA 8260B 5 12/20/2 Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| Tetrachloroethene ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |
| 12/2012 | 002 05:04 JK |
| Toluene ND ug/kg FPA 82608 5 12/20/2 | 002 05:04 JK |
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| - Manager and | 002 05:04 JK |
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| Market Services and the services are the services and the services and the services and the services and the services are the | 002 05:04 JK |
| Xylene, Total ND ug/kg EPA 8260B 5 12/20/2 | 002 05:04 JK |





| MARTEL NO. 91236 000004 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time |
|----------------------------|-----------------|--------------------------------------|------------------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Surrogate Spike | 1 | | | | | |
| 4-Bromofluorobenzene | 100 | % | EPA 8260B | | | 1.1 |
| Dibromofluoromethane | 66 | % | | | | 12/20/2002 05:04 JKL |
| Toluene-d8 | 89 | % | EPA 8260B EPA 8260B | | | 12/20/2002 05:04 JKL |
| | 00 | 70 | EPA 0200B | | | 12/20/2002 05:04 JKL |
| Solids (Total) | 86 | % | EPA 160.3 | | | / / 12/19/2002 12:12 TB |
| MARTEL NO. 91236 000005 | CLIENT FSS-4 | CLIENT SAMPLE IDENTIFICATION SS-4 | | | | Sample Date/Time 12/18/2002 11:10 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capillary | | | EPA 8260B | | | |
| 5 M ft | | | LI A 0200B | | | 12/20/2002 05:48 JKL |
| Acetone | ND | ug/kg | EPA 8260B | 25 | | / / 12/20/2002 05:48 JKL |
| Benzene | ~70 | ug/kg | EPA 8260B | 5 | | |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL 12/20/2002 05:48 JKL |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL 12/20/2002 05:48 JKL |
| Bromoform | ND | ug/kg | EPA 8260B | 5 | | |
| Bromomethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 2-Butanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 05:48 JKL |
| Carbon disulfide | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Carbon tetrachloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Chlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Chloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Chloroform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Chloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| cis-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| cis-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Cyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| ,2-Dibromo-3-chloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Dibromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| ,2-Dibromoethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| ,2-Dichlorobenzene | ND | ug/kg | EPA 8260B | | | 12/20/2002 05:48 JKL |
| ,3-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 5 | | 12/20/2002 05:48 JKL |
| ,4-Dichlorobenzene | ND | ug/kg | EPA 8260B | | | 12/20/2002 05:48 JKL |
| Dichlorodifluoromethane | ND | ug/kg ug/kg | EPA 8260B | 5 5 | | 12/20/2002 05:48 JKL |
| ,1-Dichloroethane | ND | ug/kg ug/kg | EPA 8260B | | | 12/20/2002 05:48 JKL |
| ,2-Dichloroethane | ND | ug/kg ug/kg | EPA 8260B | 5 5 | | 12/20/2002 05:48 JKL |
| ,1-Dichloroethene | ND | ug/kg ug/kg | EPA 8260B | | | 12/20/2002 05:48 JKL |
| ichloromethane | ND | ug/kg ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| ,2-Dichloropropane | ND | | EPA 8260B | | | 12/20/2002 05:48 JKL |
| thylbenzene | 230 | ug/kg | | 5 | | 12/20/2002 05:48 JKL |
| -Hexanone | ND | ug/kg ug/kg | EPA 8260B EPA 8260B | 5 25 | | 12/20/2002 05:48 JKL 12/20/2002 05:48 JKL |
| riexamone | | | | | | |



| MARTEL NO. 91236 000005 | FSS-4 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 11:10 |
|-------------------------------------|--------|------------|-------------|------------|-----------------|------|--------------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Methyl Acetate . | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 4-Methyl-2-pentanone | 1 | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 05:48 JKL |
| Methyl-t-butyl ether | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Methylcyclohexane | ار | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Styrene | / (| 9.7 | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,1,1,2-Tetrachloroethane | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,1,2,2-Tetrachloroethane | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Tetrachloroethene | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Toluene | /! | 51 | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| trans-1,2-Dichloroethene | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| trans-1,3-Dichloropropene | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,2,3-Trichlorobenzene | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,2,4-Trichlorobenzene | ١ | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,1,1-Trichloroethane | ١ | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| 1,1,2-Trichloroethane | 1 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Trichloroethene | ١ | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Trichlorofluoromethane | ١ | 1D | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Vinyl chloride | ١ | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| Xylene, Total | 4 | 00 | ug/kg | EPA 8260B | 5 | | 12/20/2002 05:48 JKL |
| | | | | | | | 1 / |
| Surrogate Spike | | | | | | | 11 |
| | | | | | | | 1.1 |
| 4-Bromofluorobenzene | 1 | 04 | % | EPA 8260B | | | 12/20/2002 05:48 JKL |
| Dibromofluoromethane | 1 | 06 | % | EPA 8260B | | | 12/20/2002 05:48 JKL |
| Toluene-d8 | 8 | 3 | % | EPA 8260B | | | 12/20/2002 05:48 JKL |
| | | | | | | | / / |
| Solids (Total) | 7 | 8 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| Diesel Range Organics by GC/FID |) 4 | 50 | mg/kg | EPA 8015M | 1 | | 12/23/2002 17:27 TEH |
| 79 | | | 3 | | 2/(| | 12/20/2002 17:27 12/1 |
| | | | | | | | 11 |
| Gasoline Range Organics by GC-R | FID 15 | 4 | mg/kg | EPA 8015M | 1 | | 12/19/1902 13:54 SAK |
| | | | | | ٠ | | 12/13/1902 13:34 3AK |
| | | | | | | | 11 |
| | | | | | | | 11 |

| MARTEL I | NO. | | CLIENT SAMPLE IDENTIFICATION | | | | | Sample Date/Time | | |
|-------------|--------------|-------|------------------------------|-----------|-----------|-----------------|------|----------------------------|--|--|
| 91236 | 000006 | FSS-3 | | | | | | 12/18/2002 11:45 | | |
| Compound | d | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial | | |
| VOC by GC | MS Capillary | | | | EPA 8260B | | | 12/20/2002 06:31 JKL | | |
| | | | | | | | | 11 | | |
| Acetone | | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 06:31 JKL | | |
| Benzene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL | | |
| Bromochloro | methane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JK | | |
| Bromodichlo | romethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL | | |



| MARTEL NO. 91236 000006 | FSS-3 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 11:45 |
|----------------------------------|-------|------------|-------------|------------|-----------------|------|-----------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Bromoform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Bromomethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JK |
| 2-Butanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 06:31 JKI |
| Carbon disulfide | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Carbon tetrachloride | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Chlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Chloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Chloroform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| Chloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| cis-1,2-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| cis-1,3-Dichloropropene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Cyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2-Dibromo-3-chloropropane | i | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Dibromochloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2-Dibromoethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,3-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,4-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Dichlorodifluoromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Dichloromethane | ~ | 12 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 06:31 JKL |
| 1,2-Dichloropropane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Ethylbenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 2-Hexanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 06:31 JKL |
| Isopropylbenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Methyl Acetate | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 4-Methyl-2-pentanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 06:31 JKL |
| Methyl-t-butyl ether | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Methylcyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Styrene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1,1,2-Tetrachloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1,2,2-Tetrachloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Tetrachloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| Toluene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| trans-1,2-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| rans-1,3-Dichloropropene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroeth | ane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2,3-Trichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,2,4-Trichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1,1-Trichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| 1,1,2-Trichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| richloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |
| richlorofluoromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKL |



| | | | | | | | (|
|--|--------|--|-------------|------------|-----------------|---------|----------------------------|
| MARTEL NO. 91236 000006 | FSS-3 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| Compound | 1 00-0 | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| — — — — — — — — — — Vinyl chloride | | | ug/kg | EPA 8260B | | | 12/20/2002 06:31 JKI |
| Xylene, Total | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 06:31 JKI |
| | | | | | | | 1 |
| Surrogate Spike | | | | | | | 1 |
| | | | | | | | 1 |
| 4-Bromofluorobenzene | | 100 | % | EPA 8260B | | | 12/20/2002 06:31 JK |
| Dibromofluoromethane | | 59 | % | EPA 8260B | | | 12/20/2002 06:31 JK |
| Toluene-d8 | | 91 | % | EPA 8260B | | | 12/20/2002 06:31 JK |
| | | | | | | | 1 |
| Solids (Total) | | 84 | % | EPA 160.3 | | | 12/19/2002 12:12 TE |
| MARTEL NO. | | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| 91236 000007 | FSS-1 | | | | | | 12/18/2002 12:00 |
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capillary | | | | EPA 8260B | | 1000000 | 12/20/2002 07:14 JK |
| | | | | | | | 1 |
| Acetone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:14 JK |
| Benzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Bromochloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Bromodichloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Bromoform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Bromomethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 2-Butanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:14 JK |
| Carbon disulfide | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Carbon tetrachloride | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Chlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Chloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Chloroform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Chloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| cis-1,2-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| cis-1,3-Dichloropropene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Cyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,2-Dibromo-3-chloropropane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Dibromochloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 1,2-Dibromoethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,2-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,3-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,4-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Dichlorodifluoromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,1-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,2-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| ,1-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| The second secon | | and the second s | -99 | | | | |
| Dichloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JF |



| MARTEL NO. 91236 00 | 00007 | FSS-1 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 12:00 |
|---|--------------|-------|------------|------------------|-------------|-----------------|------|--------------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initia |
| Ethylbenzene | | | ND | — — — — ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 2-Hexanone | | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:14 JK |
| Isopropylbenzene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Methyl Acetate | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 4-Methyl-2-pentanoi | ne | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:14 JK |
| Methyl-t-butyl ether | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Methylcyclohexane | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Styrene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 1,1,1,2-Tetrachloroe | thane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 1,1,2,2-Tetrachloroe | thane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Tetrachloroethene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| Toluene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| trans-1,2-Dichloroet | nene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| trans-1,3-Dichloropre | opene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 1,1,2-Trichlo-1,2,2-tr | ifluoroethar | ne | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JK |
| 1,2,3-Trichlorobenze | ene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| 1,2,4-Trichlorobenze | ene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| 1,1,1-Trichloroethan | е | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| 1,1,2-Trichloroethan | е | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| Trichloroethene | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| Trichlorofluorometha | ne | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| Vinyl chloride | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| Xylene, Total | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:14 JKI |
| | | | | -59 | | 0 | | |
| Surrogate Spike | | | | | | | | 1 |
| | | | | | | | | 1 |
| 4-Bromofluorobenze | | | 102 | % | EPA 8260B | | | 12/20/2002 07:14 JKL |
| Dibromofluorometha | ne | | 87 | % | EPA 8260B | | | 12/20/2002 07:14 JKL |
| Toluene-d8 | | | 91 | % | EPA 8260B | | | 12/20/2002 07:14 JKL |
| Solids (Total) | | | 85 | % | EPA 160.3 | | | 12/10/2020 12 12 77 |
| Diesel Range Organi | cs by GC/F | ID | 150 | | | | | 12/19/2002 12:12 TB |
| - roos rango organi | oo by oon | | 150 | mg/kg | EPA 8015M | 1 | | 12/23/2002 17:27 TEH |
| | | | | | | | | / / |
| Gasoline Range Orga | anics by GC | -FID | 19 | mg/kg | EPA 8015M | 4 | | 12/10/1000 11 00 01/10 |
| | | | ,,, | mg/kg | EFA 60 ISM | ~10 | | 12/19/1902 14:36 SAK |
| | | | | | | | | / / |
| MARTEL NO. | | | | | | | | |
| 기 등 위에 되어 보면하고 하다고 하면 하는 것이 되었다고 있습니다. 그렇게 되었는데 있으면 하는 | 8000 | FS-2 | CLIENT S | SAMPLE IDENT | TFICATION | | | Sample Date/Time 12/18/2002 12:40 |
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| OC by GCMS Capill | ary | | | | EPA 8260B | | | 12/20/2002 07:59 JKL |
| Acetone | | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:59 JKL |



| MARTEL NO. 91236 000008 | CLIENT FS-2 | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 12:40 |
|-------------------------------------|----------------|-------------|------------|-----------------|------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Benzene | , ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Bromoform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Bromomethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 2-Butanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:59 JKL |
| Carbon disulfide | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Carbon tetrachloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Chlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Chloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Chloroform | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Chloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| cis-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| cis-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Cyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,2-Dibromo-3-chloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Dibromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,2-Dibromoethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,2-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,3-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,4-Dichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Dichlorodifluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,1-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,2-Dichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,1-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Dichloromethane | √15 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 07:59 JKL |
| 1,2-Dichloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Ethylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 2-Hexanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:59 JKL |
| sopropylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Methyl Acetate | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 4-Methyl-2-pentanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 07:59 JKL |
| Methyl-t-butyl ether | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Methylcyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Styrene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Foluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| rans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| rans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JK |
| ,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JK |



| MARTEL NO. 91236 000 | 008 FS-2 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 12:40 |
|--|----------|------------|-----------------------|------------------------|-----------------|------|--|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 1,1,2-Trichloroethane | | ND | ug/kg | EPA 8260B | | | 12/20/2002 07:59 JKL |
| Trichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Trichlorofluoromethan | į. | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Vinyl chloride | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Xylene, Total | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 07:59 JKL |
| Surrogate Spike | | | | | | | 1 . |
| 4-Bromofluorobenzene | | 99 | % | EPA 8260B | | | 12/20/2002 07:50 1/2/ |
| Dibromofluoromethane | | 63 | % | EPA 8260B | | | 12/20/2002 07:59 JKL |
| Toluene-d8 | | 94 | % | EPA 8260B | | | 12/20/2002 07:59 JKL |
| | | 0, | 70 | LI A 0200B | | | 12/20/2002 07:59 JKL |
| Solids (Total) | | 79 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| MARTEL NO. 91236 0000 | 09 FSS-2 | | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 12:45 |
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capilla | | | | EPA 8260B | | | 12/20/2002 08:42 JKL |
| | | | | | | | 11 |
| Acetone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 08:42 JKL |
| Benzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Bromochloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Bromodichloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Bromoform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Bromomethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 2-Butanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 08:42 JKL |
| Carbon disulfide | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Carbon tetrachloride | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Chlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Chloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Chloroform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Chloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| cis-1,2-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| cis-1,3-Dichloropropene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Cyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,2-Dibromo-3-chloropr | ppane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Dibromochloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,2-Dibromoethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,2-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,3-Dichlorobenzene | | | | | | | |
| 1,3-Dichlorobenzene 1,4-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| | | ND ND | ug/kg ug/kg | EPA 8260B EPA 8260B | 5 5 | | 12/20/2002 08:42 JKL 12/20/2002 08:42 JKL |
| 1,4-Dichlorobenzene | | | and the second second | | | | |



| MARTEL NO. 91236 000009 | FSS-2 | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 12:45 |
|-------------------------------------|------------|--------------|-------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 1,1-Dichloroethene | ND ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Dichloromethane | ∠20 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 08:42 JKL |
| 1,2-Dichloropropane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Ethylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 2-Hexanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 08:42 JKL |
| Isopropylbenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Methyl Acetate | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 4-Methyl-2-pentanone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 08:42 JKL |
| Methyl-t-butyl ether | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Methylcyclohexane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Styrene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,1,1,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,1,2,2-Tetrachloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Toluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| trans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| trans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,1,1-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| 1,1,2-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Trichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Trichlorofluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Vinyl chloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Xylene, Total | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 08:42 JKL |
| Surrogate Spike | | | | | | 11 |
| 4-Bromofluorobenzene | 100 | % | EPA 8260B | | | / / 12/20/2002 08:42 JKL |
| Dibromofluoromethane | 67 | % | EPA 8260B | | | |
| Foluene-d8 | 104 | % | EPA 8260B | | | 12/20/2002 08:42 JKL 12/20/2002 08:42 JKL |
| Solids (Total) | 80 | % | EPA 160.3 | | | / / 12/19/2002 12:12 TB |
| MARTEL NO. 91236 000010 F | CLIENT: | SAMPLE IDENT | TIFICATION | | | Sample Date/Time 12/18/2002 13:00 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Solids (Total) | 77 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| Diesel Range Organics by GC/FID | 47 | mg/kg | EPA 8015M | 1 | | 12/23/2002 17:27 TEH |
| Gasoline Range Organics by GC-F | FID /11 | ma#:- | EDA 904514 | g · | | 10/10/1000 15 10 01 |
| occounts realings organics by Go-F | 10 8 11 | mg/kg | EPA 8015M | 1 | | 12/19/1902 15:19 SA |



11



MARTEL NO. CLIENT SAMPLE IDENTIFICATION

91236 000010

Compound Test Value Test Unit Method Detection Limit Flag Analysis Date/Time/Initial

MARTEL NO. CLIENT SAMPLE IDENTIFICATION Sample Date/Time 91236 000011 FSS-7 12/18/2002 13:05 Compound Test Value Test Unit Method **Detection Limit** Flag Analysis Date/Time/Initial VOC by GCMS Capillary **EPA 8260B** 12/20/2002 09:25 JKL Acetone ND **EPA 8260B** ug/kg 25 12/20/2002 09:25 JKL Benzene ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Bromochloromethane ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Bromodichloromethane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Bromoform ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Bromomethane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL 2-Butanone ND ug/kg **EPA 8260B** 25 12/20/2002 09:25 JKL Carbon disulfide ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Carbon tetrachloride ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Chlorobenzene ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Chloroethane ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Chloroform ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Chloromethane ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL cis-1,2-Dichloroethene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL cis-1,3-Dichloropropene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Cyclohexane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL 1,2-Dibromo-3-chloropropane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Dibromochloromethane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL 1,2-Dibromoethane ND 5 ug/kg EPA 8260B 12/20/2002 09:25 JKL 1,2-Dichlorobenzene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL 1,3-Dichlorobenzene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL 1,4-Dichlorobenzene ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL Dichlorodifluoromethane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL 1,1-Dichloroethane ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL 1,2-Dichloroethane ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL 1,1-Dichloroethene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Dichloromethane 32 **EPA 8260B** ug/kg 5 В 12/20/2002 09:25 JKL 1,2-Dichloropropane ND **EPA 8260B** 5 12/20/2002 09:25 JKL ug/kg Ethylbenzene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL 2-Hexanone ND ug/kg **EPA 8260B** 25 12/20/2002 09:25 JKL Isopropylbenzene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL Methyl Acetate ND **EPA 8260B** ug/kg 5 12/20/2002 09:25 JKL 4-Methyl-2-pentanone ND ug/kg **EPA 8260B** 25 12/20/2002 09:25 JKL Methyl-t-butyl ether ND **EPA 8260B** ug/kg 5 12/20/2002 09:25 JKL Methylcyclohexane ND **EPA 8260B** ug/kg 5 12/20/2002 09:25 JKL Styrene ND **EPA 8260B** 5 ug/kg 12/20/2002 09:25 JKL ,1,1,2-Tetrachloroethane ND ug/kg **EPA 8260B** 5 12/20/2002 09:25 JKL

Martel Laboratories JDS Inc.



| MARTEL NO. 91236 000011 FSS-7 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:05 |
|-------------------------------------|------------|--------------|--------------------------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 1,1,2,2-Tetrachloroethane | √6.7 | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKI |
| Tetrachloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKI |
| Toluene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| trans-1,2-Dichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| trans-1,3-Dichloropropene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKI |
| 1,2,3-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| 1,1,1-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| 1,1,2-Trichloroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| Trichloroethene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| Trichlorofluoromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| Vinyl chloride | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| Xylene, Total | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 09:25 JKL |
| | | | | | | / |
| Surrogate Spike | | | | | | 7 |
| | | | | | | 1 |
| 4-Bromofluorobenzene | 100 | % | EPA 8260B | | | 12/20/2002 09:25 JKL |
| Dibromofluoromethane | 60 | % | EPA 8260B | | | 12/20/2002 09:25 JKL |
| Toluene-d8 | 89 | % | EPA 8260B | | | 12/20/2002 09:25 JKL |
| | | | | | | 12/20/2002 00:20 01/2 |
| Solids (Total) | 76 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| MARTEL NO. 91236 000012 FS-8 | CLIENT | SAMPLE IDENT | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Solids (Total) | 77 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |
| Diesel Range Organics by GC/FID | 29 | mg/kg | EPA 8015M | 1 | | 12/23/2002 17:27 TEH |
| | | 0 0 | | | | 1 / |
| | | | | | | 1 1 |
| Gasoline Range Organics by GC-FID | 5.7 | mg/kg | EPA 8015M | 1 | | 12/19/1902 16:00 SAK |
| | | 3 | 1/27/12/45/14/75/17/20/75/17/4 | 63 | | / / |
| | | | | | | 1 1 |
| MARTEL NO. 91236 000013 FSS-8 | CLIENT S | SAMPLE IDENT | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| OC by GCMS Capillary | | | EPA 8260B | | | 12/20/2002 10:09 JKL |
| | | | | | | 1.1 |
| Acetone | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 10:09 JKL |
| Benzene | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| Bromochloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JF |
| Bromodichloromethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |



| MARTEL NO. 91236 0000 | 013 FSS-8 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
|----------------------------|-----------|------------|-------------|------------|-----------------|------|-----------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Bromoform | | ND | ug/kg | EPA 8260B | | | 12/20/2002 10:09 JK |
| Bromomethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 2-Butanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 10:09 JK |
| Carbon disulfide | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Carbon tetrachloride | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Chlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Chloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Chloroform | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Chloromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| cis-1,2-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| cis-1,3-Dichloropropen | e | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Cyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,2-Dibromo-3-chlorop | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Dibromochloromethane | 9 | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,2-Dibromoethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,2-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,3-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,4-Dichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Dichlorodifluoromethan | е | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,1-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,2-Dichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 1,1-Dichloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKI |
| Dichloromethane | | 53 | ug/kg | EPA 8260B | 5 | В | 12/20/2002 10:09 JKI |
| 1,2-Dichloropropane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| Ethylbenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JK |
| 2-Hexanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 10:09 JKI |
| sopropylbenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKI |
| Methyl Acetate | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKI |
| I-Methyl-2-pentanone | | ND | ug/kg | EPA 8260B | 25 | | 12/20/2002 10:09 JKI |
| Methyl-t-butyl ether | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKI |
| Methylcyclohexane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| Styrene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,1,1,2-Tetrachloroetha | ne | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,1,2,2-Tetrachloroetha | ne | / 6.9 | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| etrachloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| oluene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ans-1,2-Dichloroethen | е | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ans-1,3-Dichloroprope | ne | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,1,2-Trichlo-1,2,2-triflue | oroethane | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,2,3-Trichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,2,4-Trichlorobenzene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,1,1-Trichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| ,1,2-Trichloroethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| richloroethene | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| richlorofluoromethane | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |



| MARTEL N 91236 | IO. 000013 | FSS-8 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
|-------------------|---------------|-------|------------|----------------------|------------|-----------------|------|--------------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Vinyl chloride | | | ND | — — — — — . ug/kg | EPA 8260B | | | 12/20/2002 10:09 JKL |
| Xylene, Total | | | ND | ug/kg | EPA 8260B | 5 | | 12/20/2002 10:09 JKL |
| | 276 | | | | | | | 11 |
| Surrogate Spi | ke | | | | | | | 1 1 |
| | | | | | | | | 1 1 |
| 4-Bromofluor | benzene | | 99 | % | EPA 8260B | | | 12/20/2002 10:09 JKL |
| Dibromofluoro | methane | | 65 | % | EPA 8260B | | | 12/20/2002 10:09 JKL |
| Toluene-d8 | | | 92 | % | EPA 8260B | | | 12/20/2002 10:09 JKL |
| | | | | | | | | 1.1 |
| Solids (Total) | | | 74 | % | EPA 160.3 | | | 12/19/2002 12:12 TB |

RD083748

All Procedures used are in accordance with the following methods:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S. EPA Washington D.C., Third Edition, December 1996. Martel is not responsible for sample collection or transportation to the laboratory.

| QC_ | - awayle | a la | Project Manager |
|------|----------|--|-----------------|
| Date | 1 13 3 | Total Pages | Date 1/13/03 |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| EPA SAMPLE N | 0. |
|--------------|----|
|--------------|----|

| Lab Name: Martel | Labs JDS | Contract: MDE | FS 6 |
|----------------------|--------------------------|---|-------------|
| Lab Code: | Case No.: | SAS No.: S | DG No.: |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 1 |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122004.D |
| Level: (low/med) , | LOW | Date Received: | 12/18/02 |
| % Moisture: not dec. | 0 . | Date Analyzed: | 12/20/02 |
| GC Column: Rtx 50 | 02. ID: <u>0.25</u> (mm) | Dilution Factor: | 1.0 |
| Soil Extract Volume: | 1 (uL) | Soil Aliquot Volu | me: 1 (uL) |
| Number TICs found: | | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Marte | Labs JDS | Cont | ract: MDE | FSS 6 | |
|----------------------|------------------|------------------------------------|------------------------------|------------|------|
| Lab Code: | Case No.: | SA | S No.: | SDG No.: | |
| Matrix: (soil/water) | SOIL | | Lab Sample ID | | |
| Sample wt/vol: | 5.0 (g/ml |) <u>G</u> | Lab File ID: | A2122005.D | |
| Level: (low/med) | LOW | | Date Received | : 12/18/02 | |
| % Moisture: not dec | . 0 | | Date Analyzed | : 12/20/02 | 412H |
| GC Column: Rtx 5 | 502. ID: 0.25 (r | mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume: | 1 (uL) | | Soil Aliquot Vol | ume: 1 | (uL) |
| Number TICs found: | 0 | CONCEN ⁻ (ug/L or ug | FRATION UNITS g/Kg) UG/KG | | |
| CAS NO. | COMPOUND NA | .ME | RT E | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Ma | artel Labs JD | S | Contract: | MDE | FSS 5 | |
|--------------------|---------------|-----------------|-----------------|----------------|------------|------|
| Lab Code: | | Case No.: | SAS No | .: S | DG No.: | |
| Matrix: (soil/wate | er) SOIL | | Lat | Sample ID: | 91236 3 | |
| Sample wt/vol: | 5.0 | (g/ml) <u>G</u> | Lat | File ID: | A2122006.D | |
| Level: (low/med |) . LOW | | Dat | te Received: | 12/18/02 | - |
| % Moisture: not of | dec. 0 | | Dat | te Analyzed: | 12/20/02 | |
| GC Column: | Rtx 502. ID: | 0.25 (mm) | Dilu | ution Factor: | 1.0 | |
| Soil Extract Volu | me: <u>1</u> | (uL) | Soi | l Aliquot Volu | me: 1 | (uL) |
| | | | CONCENTRAT | | | |
| Number TICs fou | ınd: 0 | | (ug/L or ug/Kg) | UG/KG | | |
| CAS NO. | СОМІ | POUND NAME | | RT ES | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Martel | Labs JDS | Contract: MDE | FS 4 | |
|----------------------|-------------------|---|------------|------|
| Lab Code: | Case No.: | SAS No.: S | SDG No.: | |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 4 | |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122007.D | |
| Level: (low/med) . | LOW | Date Received: | 12/18/02 | |
| % Moisture: not dec. | 0 | Date Analyzed: | 12/20/02 | |
| GC Column: Rtx 5 | 02. ID: 0.25 (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume: | 1 (uL) | Soil Aliquot Volu | ıme: 1 | (uL) |
| Number TICs found: | 0 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: | Martel | Labs JDS | | Contract: N | FSS 4 | | |
|----------------------|----------|------------------------|------------------|--------------|------------|------------|-------|
| Lab Code: | | | ase No.: | SAS No.: | S | DG No.: | |
| Matrix: (soil/v | vater) | SOIL | | Lab S | Sample ID: | 91236 5 | |
| Sample wt/vo | ol: | 5.0 | (g/ml) G | Lab F | File ID: | A2122008.D | |
| Level: (low/n | ned) , | LOW | | Date | Received: | 12/18/02 | -19-4 |
| % Moisture: r | not dec. | 0 | | Date | Analyzed: | 12/20/02 | |
| GC Column: | Rtx 50 | 02. ID: 0 | 0.25 (mm) | Dilutio | on Factor: | 1.0 | |
| Soil Extract Volume: | | 1 (uL) Soil Aliquot Vo | | Aliquot Volu | me: 1 | (uL) | |
| Number TICs | found: | 10 | | ONCENTRATIC | UG/KG | | |
| CAS NO. | | СОМРО | UND NAME | F | RT ES | T. CONC. | Q |
| 1. 000108 | 3-87-2 | Cyclohex | ane, methyl- | | 8.98 | 72 | JN |
| 2. 000592 | 2-27-8 | Heptane, | 2-methyl- | | 9.71 | 40 | JN |
| 3. 000638 | 3-04-0 | Cyclohex | ane, 1,3-dimethy | | 0.67 | 67 | JN |

4. 001678-91-7

5. 001678-92-8

6. 000611-14-3

7. 000637-50-3

8. 000535-77-3

9. 015677-15-3

10. 000091-57-6

Cyclohexane, ethyl-

Cyclohexane, propyl-

Benzene, 1-propenyl-

Naphthalene, 2-methyl-

Benzene, 1-ethyl-2-methyl-

Benzene, 1-methyl-3-(1-methylet

Cycloprop[a]indene, 1,1a,6,6a-tet

536

67

43

49

44

42

40

46

93

12.67

15.72

18.16

20.29

21.13

23.61

28.28

JN

JN

JN

JN

JN

JN

JN

JN

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Marte | l Labs JDS | Contract: MDE | FSS | 3 |
|----------------------|------------------------|--|------------|------|
| Lab Code: | Case No.: | SAS No.: S | DG No.: | |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 6 | |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122009.D | |
| Level: (low/med) | LOW | Date Received: | 12/18/02 | |
| % Moisture: not ded | . 0 | Date Analyzed: | 12/20/02 | |
| GC Column: Rtx | 502. ID: 0.25 (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume | : <u>1</u> (uL) | Soil Aliquot Volu | me: 1 | (uL) |
| Number TICs found | (1 | ONCENTRATION UNITS: ug/L or ug/Kg) UG/KG | | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. | Q |
| 1. 000091-57-6 | Naphthalene, 2-methyl- | 28.27 | 22 | JN |
| 2. 000092-52-4 | Biphenyl | 29.70 | 6 | JN |

18

6

JN

29.70

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: | Martel L | abs JDS | | Contract: | MDE | F | SS 1 |
|-----------------|----------|----------|-------------------|-------------------------------|---------------|------------|------|
| Lab Code: | = | | ase No.: | SAS No | .: | SDG No.: | |
| Matrix: (soil/v | vater) | SOIL | | Lal | Sample ID | : 91236 7 | |
| Sample wt/vo | ol: | 5.0 | (g/ml) G | Lat | File ID: | A212201 | 0.D |
| Level: (low/n | ned) , | LOW | - | Da | te Received: | : 12/18/02 | |
| % Moisture: r | not dec. | 0 | | Da | te Analyzed: | 12/20/02 | |
| GC Column: | Rtx 50 | 2. ID: 0 |).25 (mm) | Dilu | ution Factor: | 1.0 | |
| Soil Extract V | olume: | 1 | (uL) [·] | Soi | l Aliquot Vol | ume: 1 | (uL) |
| Number TICs | found: | 0 | | CONCENTRAT (ug/L or ug/Kg) | | | |
| CAS NO. | | СОМРО | UND NAME | | RT E | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Martel I | abs JDS | Contract: MDE | FS 2 | |
|----------------------|-------------------|--|------------|------|
| Lab Code: | Case No.: | SAS No.: | SDG No.: | |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 8 | |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122011.D | |
| Level: (low/med) , | LOW | Date Received: | 12/18/02 | |
| % Moisture: not dec. | 0 | Date Analyzed: | 12/20/02 | |
| GC Column: Rtx 50 | 02. ID: 0.25 (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume: | 1 (uL) | Soil Aliquot Volu | ıme: 1 | (uL) |
| Number TICs found: | 0 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| 100 | |
|-----|--|
| | |
| 10 | |

| Lab Name: M | artel Labs J | DS | Contract: MDE | FSS 2 | |
|-------------------|--------------|---------------------|---|-------------|-------------|
| Lab Code: | | Case No.: | SAS No.: | SDG No.: | |
| Matrix: (soil/wat | er) SOIL | • | Lab Sample I | d- | |
| Sample wt/vol: | 5.0 | (g/ml) G | Lab File ID: | A2122012.D | |
| Level: (low/med | i) LOW | 1 | Date Receive | - | |
| % Moisture: not | dec. 0 | | Date Analyze | d: 12/20/02 | -3 |
| GC Column: | Rtx 502. ID | 0: <u>0.25</u> (mm) | Dilution Facto | or: 1.0 | |
| Soil Extract Volu | ıme: 1 | (uL) | Soil Aliquot V | olume: 1 | _ _ (uL) |
| Number TICs for | und: | 0 | CONCENTRATION UNIT (ug/L or ug/Kg) UG/K | | |
| CAS NO. | COM | IPOUND NAME | RT | EST CONC | 0 |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Martel | Labs JDS | Contract: MDE | FSS 7 | |
|----------------------|--------------------------|--|------------|------|
| Lab Code: | Case No.: | SAS No.: S | DG No.: | |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 11 | |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122013.D | 7.0 |
| Level: (low/med) , | LOW | Date Received: | 12/18/02 | |
| % Moisture: not dec. | 0 | Date Analyzed: | 12/20/02 | |
| GC Column: Rtx 5 | 02. ID: <u>0.25</u> (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume: | 1 (uL) | Soil Aliquot Volu | me: 1 | (uL) |
| Number TICs found: | 0 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. | Q |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: Martel | Labs JDS | Contract: MDE | FSS 8 | |
|----------------------|--------------------------|--|------------|-------------|
| Lab Code: | Case No.: | SAS No.: | SDG No.: | |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | 91236 13 | |
| Sample wt/vol: | 5.0 (g/ml) G | Lab File ID: | A2122014.D | |
| Level: (low/med) . | LOW | Date Received: | 12/18/02 | |
| % Moisture: not dec. | 0 | Date Analyzed: | 12/20/02 | |
| GC Column: Rtx 5 | 02. ID: <u>0.25</u> (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Volume: | 1 (uL) | Soil Aliquot Volu | ıme: 1 | (uL) |
| Number TICs found: | 0 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG | | |
| CAS NO. | COMPOUND NAME | RT ES | ST. CONC. | Q |

3B SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

| Lab Name: | Martel Labs JDS | | Contract: | MDE | | |
|--------------|------------------|---------|-----------|--------|-----------|-----|
| Lab Code: | Ca | se No.: | SAS No | .: | SDG No.: | ; |
| Matrix Spike | - EPA Sample No. | FS 6 | - | Level: | (low/med) | LOW |

| COMPOUND . | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC# | QC LIMITS REC. |
|--------------------|---------------------------|------------------------------------|--------------------------------|-----------------|----------------------|
| 1,1-Dichloroethene | 100 | 0.0 | 63 | 63 | 40 - 130 |
| Benzene | 100 | 0.0 | 69 | 69 | 40 - 130 |
| Trichloroethene | 100 | 0.0 | 70 | 70 | 40 - 130 |
| Toluene | 100 | 0.0 | 77 | 77 | 40 - 130 |
| Chlorobenzene | 100 | 0.0 | 74 | 74 | 40 - 130 |

| COMPOUND | SPIKE ADDED (ug/Kg) | MSD CONCENTRATION (ug/Kg) | MSD % REC# | % RPD# | QC I | _IMITS REC. |
|--------------------|---------------------------|---------------------------------|------------------|-----------|------|----------------|
| 1,1-Dichloroethene | 100 | 61 | 61 | 3 | 60 | 40 - 130 |
| Benzene | 100 | 71 | 71 | 3 | 60 | 40 - 130 |
| Trichloroethene | 100 | 60 | 60 | 15 | 60 | 40 - 130 |
| Toluene | 100 | 64 | 64 | 18 | 60 | 40 - 130 |
| Chlorobenzene | 100 | 70 | 70 | 6 | 60 | 40 - 130 |

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

| COMMENTS: | |
|-----------|--|
| | |
| | |

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

| EPA | SAMPL | F | NO |
|------------|-------|---|----|
| | | | |

| 0 | | | |
|---|---|---|---|
| 1 | | 4 | P |
| | 0 | | |

| Lab Name: | Martel L | abs JDS | i | Contract: ME | DE | BLK | |
|-----------------|----------|---------|-----------|--------------|------------|------------|-----------|
| Lab Code: | | | Case No.: | SAS No.: | S | DG No.: | |
| Matrix: (soil/w | ater) | SOIL | | Lab Sa | mple ID: | Blank | |
| Sample wt/vol | : | 5.0 | (g/ml) G | Lab File | e ID: | A2122003.D | |
| Level: (low/m | ed) | LOW | | Date R | eceived: | 12/18/02 | |
| % Moisture: no | ot dec. | 0, | | Date A | nalyzed: | 12/20/02 | |
| GC Column: | Rtx 50 | 2. ID: | 0.25 (mm) | Dilution | Factor: | 1.0 | |
| Soil Extract Vo | olume: | | (uL) | Soil Alic | quot Volui | me: | – (uL) |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND (ug/L or ug/Kg) | UG/KG | Q |
|---------|---------------------------|-------|---|
| | Dichlorodifluoromethane | 5 | U |
| | Chloromethane | 5 | U |
| | Vinyl chloride | 5 | U |
| | Bromomethane | 5 | U |
| | Chloroethane | 5 | U |
| | Trichlorofluoromethane | 5 | U |
| | 1,1-Dichloroethene | 5 | U |
| | Acetone | 25 | U |
| | lodomethane | 5 | U |
| | Carbon disulfide | 5 | U |
| | Methylene chloride | 5 | U |
| | MTBE | 5 | Ū |
| | trans-1,2-Dichloroethene | 5 | U |
| | Acrylonitrile | 5 | U |
| | 1,1-Dichloroethane | 5 | U |
| | Vinyl acetate | 5 | U |
| | 2,2-Dichloropropane | 5 | U |
| | cis-1,2-Dichloroethene | 5 | U |
| | 2-Butanone | 25 | U |
| | Bromochloromethane | 5 | Ū |
| | Chloroform | 5 | U |
| | 1,1,1-Trichloroethane | 5 | U |
| | Carbon tetrachloride | 5 | U |
| | 1,1-Dichloropropene | 5 | U |
| | Benzene | 5 | U |
| | 1,2-Dichloroethane | 5 | U |
| | Trichloroethene | 5 | Ū |
| | 1,2-Dichloropropane | 5 | Ū |
| | Dibromomethane | 5 | Ü |
| | Bromodichloromethane | 5 | Ü |
| | cis-1,3-Dichloropropene | 5 | Ū |
| | 4-Methyl-2-pentanone | 25 | U |
| | Toluene | 5 | Ü |
| | trans-1,3-Dichloropropene | 5 | U |
| | 1,1,2-Trichloroethane | 5 | Ū |
| | 1,3-Dichloropropane | 5 | U |
| | Tetrachloroethene | 5 | U |
| | 2-Hexanone | 25 | U |
| | Dibromochloromethane | 5 | Ū |

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

| EPA SAMPLE N | Ο. |
|--------------|----|
|--------------|----|

| Lab Name: N | Martel L | abs JDS | 3 | Contract: MDE | BLK | |
|------------------|----------|---------|-----------|-------------------|------------|------|
| Lab Code: | | | Case No.: | SAS No.: S | DG No.: | |
| Matrix: (soil/wa | iter) | SOIL | | Lab Sample ID: | Blank | |
| Sample wt/vol: | | 5.0 | (g/ml) G | Lab File ID: | A2122003.D | |
| _evel: (low/me | ed) | LOW | | Date Received: | 12/18/02 | |
| % Moisture: no | t dec. | 0, | | Date Analyzed: | 12/20/02 | |
| GC Column: | Rtx 50 | 2. ID: | 0.25 (mm) | Dilution Factor: | 1.0 | |
| Soil Extract Vol | lume: | | (uL) | Soil Aliquot Volu | me: | (uL) |
| | | | | | | |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND (ug/L or ug/Kg) | UG/KG | Q |
|---------|-----------------------------|-------|---|
| | Chlorobenzene | 5 | U |
| | 1,2-Dibromoethane | 5 | U |
| | Ethylbenzene | 5 | U |
| | 1,1,1,2-Tetrachloroethane | 5 | U |
| | m,p-Xylene | 10 | U |
| | o-Xylene | 5 | U |
| | Styrene | 5 | U |
| | Bromoform | 5 | U |
| | Isopropylbenzene | 5 | U |
| | trans-1,4-dichloro-2-butene | 5 | U |
| | Bromobenzene | 5 | U |
| | 1,1,2,2-Tetrachloroethane | 5 | U |
| | n-Propylbenzene | 5 | U |
| | 1,2,3-Trichloropropane | 5 | U |
| | 2-Chlorotoluene | 5 | U |
| | 1,3,5-Trimethylbenzene | 5 | U |
| | 4-Chlorotoluene | 5 | U |
| | t-Butylbenzene | 5 | U |
| | 1,2,4-Trimethylbenzene | 5 | U |
| | s-Butylbenzene | 5 | U |
| | 1,3-Dichlorobenzene | 5 | U |
| | p-Isopropyltoluene | 5 | U |
| | 1,4-Dichlorobenzene | 5 | U |
| | 1,2-Dibromo-3-chloropropane | 5 | U |
| | n-Butylbenzene | 5 | U |
| | 1,2-Dichlorobenzene | 5 | U |
| | 1,2,4-Trichlorobenzene | 5 | U |
| | Hexachlorobutadiene | 5 | U |
| | Naphthalene | 5 | U |
| | 1,2,3-Trichlorobenzene | 5 | U |

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| Lab Name: N | Martel L | abs JDS | | Contract: | MDE | BLK | |
|------------------|----------|---------|--|-----------------|----------------|------------|------|
| Lab Code: | | | Case No.: | SAS No | .: S | DG No.: | |
| Matrix: (soil/wa | ater) | SOIL | | Lat | Sample ID: | Blank | |
| Sample wt/vol: | | 5.0 | (g/ml) G | Lat | File ID: | A2122003.D | |
| Level: (low/me | ed) . | LOW | No. of Contract of | Da | te Received: | 12/18/02 | |
| % Moisture: no | t dec. | 0 | | Dat | te Analyzed: | 12/20/02 | _ |
| GC Column: | Rtx 50: | 2. ID: | 0.25 (mm) | Dilu | ution Factor: | 1.0 | |
| Soil Extract Vo | lume: | 1 | (uL) | Soi | l Aliquot Volu | me: 1 | (uL) |
| | | | | CONCENTRAT | ION UNITS: | | |
| Number TICs fo | ound: | 0 | | (ug/L or ug/Kg) | UG/KG | | |
| CAS NO. | | COMPO | DUND NÅME | Ų | RT ES | ST. CONC. | 0 |

MARTEL QC

Sensible Scientific Solutions

Quality Control Report

Monday, January 20, 2003

Blank Results

| Test Name: | Solids (Total) | | |
|--------------|------------------|-----------------|-----------------|
| Date of Test | Time of Analysis | Analytic Result | Unit of Measure |
| 12/19/2002 | 12:12 | <1 | % |
| 12/19/2002 | 12:12 | <1 | % |

1025 Cromwell Bridge Road - Baltimore, Maryland 21286

PH 410-825-7790 FAX 410-821-1054 EMAIL: martel @ martelabs.com

Page 1



Sensible Scientific Solutions

Quality Control Report

Monday, January 20, 2003

Replicate Results

| Test N | ame: Solid | is (Total) | | | | |
|--------------|----------------|-------------------------|-------------------|-------------------|-------|-------|
| Date of Test | Time of Analys | s Sample Identification | Analytic Result A | Analytic Result B | Units | RPD |
| 12/19/2002 | 12:12 | 91198: Primary Sludge | 3.3 | 3.4 | % | 2.985 |
| 12/19/2002 | 12:12 | 91236: FS-8 | 75 | 77 | % | 2.632 |

PH 410-825-7790 FAX 410-821-1054 EMAIL: martel @ martelabs.com

Page 1

| MARTI | MARTEL CHAIN OF CUSTODY / SAMPLE INFORMATION FORM | NAS/Y | DI F IN | FORM | MATION FORM |
|--------------------------------------|---|--|------------------------|--|--------------------------|
| Martel Labor | Martel Laboratories _{Jos} Inc. • 1025 Cromwell Bridge Road • Baltimore, MD 21286 • (410) 825-7790 • FAX (410) 821-1054 | ad • Baltimore, | MD 21286 • (| 410) 825-7 | 790 · FAX (410) 821-1054 |
| MARTEL LOG# G1234 | Client Code MbE | Sa | Sampler Scott Muses | .# M. | 160 / Ands 7. 1.2 |
| Client Name/Phone/FAX M DE | / Scott Murgan/ | 7-3472 | oject Name/# | Fred | 1 7 |
| Client Address 1800 Washing fen Blud | fun Blud, Suite 625 | 00 | Contract/P.O Number | umber | |
| Invoice Address Balk, MD | 7 | Sa | Sample Turnaround Time | und Time | Std |
| Station No / Station Location | Container Description/ Matrix Preservation Status | Potentially # of Hazardous? Containers | of Date | Time | ı |
| 1 FS-6 | Soil 1-402 | | - 2 | , | |
| 2 FSS-6 | Soil 1-402, 1-802 | No 2 | | 4:53 | VOC DRO/GRO |
| 1 FSS-5 | 1-402 | _ | | 10:21 | 1 |
| FS-4 | 1-402 | - | | 11:04 | 700 |
| ½ F5s-4 | 1-408, 1-802 | 7 | | 0111 | VOC. NPO/GRO |
| · FSS-3 | 1405 | 1 | | 1145 | VOC |
| 1 F35-1 | 1402, 1-802 | 2 | T | 1200 | VUC, DRO/GRO |
| y FS-2 | 70 / - 1 |) | | 0721 | |
| 6. FSS-2 | 1-405 | 1 | | 1245 | Voc |
| FS-7 | 708-1 | 1 | | 1300 | DRO/GRO |
| 155-1 | 1-407 | / | | 1305 | /α |
| F5-8 | 1-802 | 1 | | 1316 | DRO/GRO |
| FSF8 | 80 h-1 | 1 | | 0/8/ | Voc |
| Transferred My 12/18/12 | a Alla | 12-18-01 15.2cm | Sufficient | Cooler Res Sufficient ice? - Xes/No | ceipt Informati |
| Transferred by: | | Date Time | | intainers pre | d? - \ |
| Transferred by: | Received by: | Date Time | Initials: | | |
| | | | Limitals. 13 | | Jaile. 1910/UL |



Sensible Scientific Solutions

Certificate of Analysis

Friday, January 31, 2003

Prepared expressly for:

State of Maryland - MDE 1800 Washington Blvd

Suite 625

Baltimore, Maryland 21230

Attention: Scott Morgan Report for Lab No: 91401. Samples received by Martel.

Project Identification: Frederick, Site I No. 65586

RECEIVED

FEB 0 4 2003

ERRP

| MARTEL N 91401 | IO. 000001 | MW-2 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/26/2002 10:30 |
|-------------------|----------------|------|------------|--------------|---|-----------------|------|--|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCM | IS Capillary | | | | EPA 8260B | | - | 01/02/2003 03:03 JKI |
| Acetone | | | ND | | | | | 1 |
| Benzene | | | ND 05 | ug/l | EPA 8260B | 5 | | 01/02/2003 03:03 JKI |
| Bromochloron | nothana | | ∕85 ND | ug/l | EPA 8260B | 50 | | 01/02/2003 06:53 JKL |
| Bromodichlor | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| Bromoform | omethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| 5050 Y000 | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Bromomethan | ie | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 2-Butanone | | | ND | ug/I | EPA 8260B | 5 | | 01/02/2003 03:03 JKL |
| Carbon disulfi | 77.00) 269.00 | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Carbon tetracl | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Chlorobenzen | е | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Chloroethane | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Chloroform | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Chloromethan | е | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| cis-1,2-Dichlor | oethene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| cis-1,3-Dichlor | opropene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Cyclohexane | | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 1,2-Dibromo-3 | -chloropropane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Dibromochloro | methane | | ND | ug/l | EPA 8260B | 1 | | |
| ,2-Dibromoet | hane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,2-Dichlorobe | nzene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,3-Dichlorobe | nzene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,4-Dichlorobe | nzene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Dichlorodifluor | omethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,1-Dichloroeth | nane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,2-Dichloroeth | ane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ,1-Dichloroeth | iene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| ichloromethar | V-200- | | ND | | EPA 8260B | 117 | | 01/02/2003 03:03 JKL |
| ,2-Dichloropro | | | ND | ug/l | NAME OF THE PARTY | 1 | | 01/02/2003 03:03 JKL |
| thylbenzene | F | | 5700 | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| -Hexanone | | | ND | ug/l ug/l | EPA 8260B EPA 8260B | 100 5 | | 01/02/2003 07:37 JKL 01/02/2003 03:03 JKL |
| | | | | -3" | | O () | | 01/02/2003 03:03 JK |

Martel Laboratories $_{\it JDS}$ Inc.

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| MARTEL NO. 91401 000001 | MW-2 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/26/2002 10:30 |
|------------------------------------|------|---------------|-------------|-------------|------------------------|------|--------------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Isopropylbenzene | | 260 | ug/l | EPA 8260B | 50 | | 01/02/2003 06:53 JKI |
| Methyl Acetate | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 06:53 JKI |
| 4-Methyl-2-pentanone | | ND | ug/l | EPA 8260B | 5 | | 01/02/2003 03:03 JKI |
| Methyl-t-butyl ether | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| Methylcyclohexane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| Styrene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| 1,1,1,2-Tetrachloroethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKI |
| 1,1,2,2-Tetrachloroethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Tetrachloroethene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Toluene | | 230 | ug/l | EPA 8260B | 50 | | 01/02/2003 06:53 JKL |
| trans-1,2-Dichloroethene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| trans-1,3-Dichloropropene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethan | е | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 1,2,3-Trichlorobenzene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 1,2,4-Trichlorobenzene | | ND | ug/l | EPA 8260B | ĺ | | 01/02/2003 03:03 JKL |
| 1,1,1-Trichloroethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| 1,1,2-Trichloroethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Trichloroethene | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Trichlorofluoromethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Vinyl chloride | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:03 JKL |
| Xylene, Total | | √7400 | ug/l | EPA 8260B | 50 | | 01/02/2003 06:53 JKL |
| | | | | | | | 1 1 |
| Surrogate Spike | | | | | | | 1.1 |
| 4-Bromofluorobenzene | | 94 | % | EPA 8260B | | | / / |
| Dibromofluoromethane | | 85 | | | | | 01/02/2003 03:03 JKL |
| Toluene-d8 | | 85 | % | EPA 8260B | | | 01/02/2003 03:03 JKL |
| Toldene-do | | 85 | % | EPA 8260B | | | 01/02/2003 03:03 JKL |
| | | | | | | | / / |
| MARTEL NO. | | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| 91401 000002 | MW-1 | | | | | | 12/26/2002 10:00 |
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capillary | | | | EPA 8260B | | === | 01/02/2003 03:47 JKL |
| Acetone | | ND | ug/l | EPA 8260B | 5 | | 01/02/2003 03:47 JKL |
| Benzene | | / 9600 | ug/l | EPA 8260B | 100 | | 01/02/2003 09:04 JKL |
| Bromochloromethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:47 JKL |
| Bromodichloromethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:47 JKL |
| Bromoform | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:47 JKL |
| Bromomethane | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:47 JKL |
| 2-Butanone | | ND | ug/l | EPA 8260B | 5 | | 01/02/2003 03:47 JKL |
| | | | - | | 00°700°1 | | |
| Carbon disulfide | | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 03:47 JKI |



| MARTEL NO 91401 | 000002 | CLIEN MW-1 | T SAMPLE IDEN | TIFICATION | | Sample Date/Time 12/26/2002 10:00 |
|---------------------|-------------------|---------------|---------------|------------|-----------------|-----------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag Analysis Date/Time/Initia |
| Chlorobenzene | | ND | ug/l | EPA 8260B | - 1 | 01/02/2003 03:47 Jk |
| Chloroethane | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Chloroform | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Chloromethane | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| cis-1,2-Dichloroe | ethene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| cis-1,3-Dichlorop | propene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Cyclohexane | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,2-Dibromo-3-cl | hloropropane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Dibromochlorom | ethane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,2-Dibromoetha | ine | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,2-Dichlorobenz | zene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,3-Dichlorobenz | zene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,4-Dichlorobenz | rene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Dichlorodifluoron | nethane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,1-Dichloroethar | ne | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,2-Dichloroethar | ne | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,1-Dichloroether | ne | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| Dichloromethane | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JK |
| 1,2-Dichloropropa | ane | 4.9 | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKI |
| Ethylbenzene | | 3700 | ug/l | EPA 8260B | 50 | 01/02/2003 08:20 JKI |
| 2-Hexanone | | ND | ug/I | EPA 8260B | 5 | 01/02/2003 03:47 JKI |
| Isopropylbenzene | Э | ~ 110 | ug/I | EPA 8260B | 50 | 01/02/2003 08:20 JKI |
| Methyl Acetate | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 08:20 JKI |
| 4-Methyl-2-pentar | none | ND | ug/l | EPA 8260B | 5 | 01/02/2003 03:47 JKI |
| Methyl-t-butyl eth | er | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKI |
| Methylcyclohexar | ne | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Styrene | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,1,1,2-Tetrachlor | roethane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,1,2,2-Tetrachlor | roethane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Tetrachloroethene | е | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Toluene | | 3100 | ug/l | EPA 8260B | 50 | 01/02/2003 08:20 JKL |
| trans-1,2-Dichloro | ethene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| trans-1,3-Dichloro | propene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,1,2-Trichlo-1,2,2 | 2-trifluoroethane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,2,3-Trichlorober | nzene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,2,4-Trichloroben | nzene | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,1,1-Trichloroeth | ane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| 1,1,2-Trichloroeth | ane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Trichloroethene | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Trichlorofluoromet | thane | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| /inyl chloride | | ND | ug/l | EPA 8260B | 1 | 01/02/2003 03:47 JKL |
| Kylene, Total | | √ 4800 | ug/l | EPA 8260B | 50 | 01/02/2003 08:20 JKL |
| | | | | | | 11 |
| Surrogate Spike | | | | | | 18 8 |



| MARTEL NO. 91401 000002 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
|-------------------------|------------|-------------|------------|-----------------|------|----------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| | | | | | | — — — _{[1} |
| 4-Bromofluorobenzene | 96 | % | EPA 8260B | | | 01/02/2003 03:47 JKL |
| Dibromofluoromethane | 120 | % | EPA 8260B | | | 01/02/2003 03:47 JKL |
| Toluene-d8 | 111 | % | EPA 8260B | | | 01/02/2003 03:47 JKL |
| | | | | | | 11 |
| MARTEL NO | CUENT | CAMPLE IDEN | TICIOATION | | | Commis Data (T) |

| MARTEL NO. 91401 000003 | CLIENT MW-1 drum | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/26/2002 10:00 |
|-----------------------------|---------------------|-------------|------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Volatile Organic Compounds | | | EPA 8260 | | | 01/02/2003 09:48 JKL |
| | | | | | | 1.1 |
| Acetone | ND | ug/l | EPA 8260 | 500 | | 01/02/2003 09:48 JKL |
| Benzene | √7200 | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Bromochloromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Bromodichloromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Bromoform | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Bromomethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 2-Butanone | ND | ug/l | EPA 8260 | 500 | | 01/02/2003 09:48 JKL |
| Carbon disulfide | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Carbon tetrachloride | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Chlorobenzene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Chloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Chloroform | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Chloromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| cis-1,2-Dichloroethene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| cis-1,3-Dichloropropene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Cyclohexane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2-Dibromo-3-chloropropane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Dibromochloromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2-Dibromoethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2-Dichlorobenzene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,3-Dichlorobenzene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,4-Dichlorobenzene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Dichlorodifluoromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1-Dichloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2-Dichloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1-Dichloroethene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Dichloromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2-Dichloropropane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Ethylbenzene | 4800 | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 2-Hexanone | ND | ug/l | EPA 8260 | 500 | | 01/02/2003 09:48 JKL |
| Isopropylbenzene | - 140 | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKI |
| Methyl Acetate | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 |



| MARTEL NO. 91401 000003 MV | CLIENT W-1 drum | SAMPLE IDEN | NTIFICATION | | | Sample Date/Time 12/26/2002 10:00 |
|-------------------------------------|--------------------|-------------|-------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 4-Methyl-2-pentanone | ND | ug/l | EPA 8260 | 500 | | 01/02/2003 09:48 JKL |
| Methyl-t-butyl ether | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Methylcyclohexane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Styrene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1,1,2-Tetrachloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1,2,2-Tetrachloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Tetrachloroethene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Toluene | r1100 | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| trans-1,2-Dichloroethene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| trans-1,3-Dichloropropene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1,2-Trichlo-1,2,2-trifluoroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2,3-Trichlorobenzene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/l | EPA 8260 | 100 | | |
| 1,1,1-Trichloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| 1,1,2-Trichloroethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Trichloroethene | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Trichlorofluoromethane | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Vinyl chloride | ND | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| Xylene, Total | ~5700 | ug/l | EPA 8260 | 100 | | 01/02/2003 09:48 JKL |
| | | ug/i | LI A 0200 | 100 | | 01/02/2003 09:48 JKL |
| Surrogate Spike | | | | | | 11 |
| C season Process | | | | | | 1 1 |
| 4-Bromofluorobenzene | 99 | % | EPA 8260 | | | 1 / |
| Dibromofluoromethane | 89 | % | EPA 8260 | | | 01/02/2003 09:48 JKL |
| Toluene-d8 | 104 | % | EPA 8260 | | | 01/02/2003 09:48 JKL |
| | | 70 | LFA 0200 | | | 01/02/2003 09:48 JKL |
| Base/Neutral/Acid Extractables | | | EPA 8270C | | | / / |
| | | | EFA 62/0C | | | 01/06/2003 17:45 JKL |
| Acenaphthene | 510 | ug/l | EPA 8270C | 500 | | 11 |
| Acenaphthylene | ⁶² | ug/l | | 500 | | 01/07/2003 9:54 JKL |
| Anthracene | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Benzo[a]anthracene | 140 | ug/l | EPA 8270C | 500 | | 01/07/2003 9:54 JKL |
| Benzo[b]fluoranthene | 58 | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Benzo[k]fluoranthene | √ 82 | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Benzo[ghi]perylene | - 120 | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Benzo[a]pyrene | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Bis-(2-chloroethoxy)methane | | ug/l | EPA 8270C | 500 | | 01/07/2003 9:54 JKL |
| Bis-(2-chloroethyl)ether | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Bis(2-chloroisopropyl)ether | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| 4-Bromophenyl phenyl ether | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Benzyl butyl phthalate | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| Carbazole | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| 4-Chloroaniline | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| 4-Chloro-3-methylphenol | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JKL |
| | | | | | | |



| MARTEL NO. 91401 000003 | CLIENT MW-1 drum | SAMPLE IDEN | TIFICATION | | Sample Date/Time 12/26/2002 10:00 |
|------------------------------|---------------------|-------------|------------|-----------------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag Analysis Date/Time/Initial |
| 2-Chloronaphthalene . | ND | ug/l | EPA 8270C | | 01/06/2003 17:45 JKL |
| 2-Chlorophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 4-Chlorophenyl phenyl ether | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Chrysene | 140 | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Dibenz[a,h]anthracene | ~20 | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Dibenzofuran | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Di-n-butyl phthalate | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 1,2-Dichlorobenzene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 1,3-Dichlorobenzene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 1,4-Dichlorobenzene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 3,3'-Dichlorobenzidine | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2,4-Dichlorophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Diethyl phthalate | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2,4-Dimethylphenol | ~20 | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Dimethyl phthalate | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 4,6-Dinitro-2-methylphenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2,4-Dinitrophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2,4-Dinitrotoluene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2,6-Dinitrotoluene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Di-n-octyl phthalate | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Bis-(2-ethylhexyl)-phthalate | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Fluoranthene | ND | ug/l | EPA 8270C | 500 | 01/07/2003 9:54 JKL |
| Fluorene | ND | ug/l | EPA 8270C | 500 | 01/07/2003 9:54 JKL |
| Hexachlorobenzene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Hexachlorocyclopentadiene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Hexachloroethane | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Indeno-(1,2,3-cd)-pyrene | 70 | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Isophorone | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2-Methylnaphthalene | 1200 | ug/l | EPA 8270C | 500 | 01/07/2003 9:54 JKL |
| 2-Methylphenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 4-Methylphenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Naphthalene | -3900 | ug/l | EPA 8270C | 500 | 01/07/2003 9:54 JKL |
| 2-Nitroaniline | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 3-Nitroaniline | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 4-Nitroaniline | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Nitrobenzene | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 2-Nitrophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| 4-Nitrophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| N-Nitrosodiphenylamine | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| N-Nitroso-di-N-propylamine | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Pentachlorophenol | ND | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JKL |
| Phenanthrene | 1400 | ug/l | EPA 8270C | 500 | 01/07/2003 9:54 JKL |
| | | | | | |
| Phenol | ~ 20 | ug/l | EPA 8270C | 5 | 01/06/2003 17:45 JK' |



| MARTEL NO. 91401 000003 | MW-1 drum | SAMPLE IDEN | NTIFICATION | | | Sample Date/Time 12/26/2002 10:00 |
|-------------------------------|------------|-------------|-------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 1,2,4-Trichlorobenzene | , ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JK |
| 2,4,5-Trichlorophenol | ND . | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JK |
| 2,4,6-Trichlorophenol | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JK |
| N-Nitrosodimethylamine | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JK |
| Hexachlorobutadiene | ND | ug/l | EPA 8270C | 5 | | 01/06/2003 17:45 JK |
| Surrogate Spike | | | | | | 1 |
| | | | | | | 1 |
| 2,4,6-Tribromophenol | 69 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| 2-Fluorobiphenyl | 87 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| 2-Fluorophenol | 51 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| Nitrobenzene-d5 | 87 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| Phenol-d6 | 35 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| Terphenyl-d14 | 83 | % | EPA 8270C | | | 01/06/2003 17:45 JKI |
| 0 | | | | | | 1 |
| Organochlorine Pesticides and | d PCB's | | EPA 8081A | | | 01/14/2003 08:52 SAH |
| Aldrin | ND | | EDA 00044 | | | 7 |
| a-BHC | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAF |
| o-BHC | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAF |
| g-BHC (Lindane) | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAH |
| J-BHC | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAH |
| Chlordane | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| ,4'-DDD | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| 4,4'-DDE | ND | ug/l | EPA 8081A | 0.2 | | 01/14/2003 08:52 SAK |
| 4,4'-DDT | ND | ug/l | EPA 8081A | 0.2 | | 01/14/2003 08:52 SAK |
| Dieldrin | ND | ug/l | EPA 8081A | 0.2 | | 01/14/2003 08:52 SAK |
| ndosulfan I | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| Indosulfan II | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| ndosulfan Sulfate | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| indrin | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| ndrin Aldehyde | | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| eptachlor | ND ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| leptachlor Epoxide | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| lethoxychlor | | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| ndrin Ketone | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| oxaphene | ND | ug/l | EPA 8081A | 0.05 | | 01/14/2003 08:52 SAK |
| CB-1016 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1221 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1232 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1242 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1248 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1246 CB-1254 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| CB-1260 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| JU-1200 | ND | ug/l | EPA 8081A | 0.5 | | 01/14/2003 08:52 SAK |
| | | | | | | |

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| MARTEL NO. 91401 000003 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
|------------------------------------|-------------|--------------|-------------------------|-----------------|----------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Surrogate Spike | | | Service Learner Service | | <u> </u> | — — — _— , |
| Surrogate Spike | | | | | | 1 |
| 2,4,5,6-Tetrachlorometaxylene | 55 | 22 | 200 | | | 1 1 |
| Decachlorobiphenyl | 55 | % | EPA 8081A | | | 01/14/2003 08:52 SAK |
| Decachiorophieny | 106 | % | EPA 8081A | | | 01/14/2003 08:52 SAK |
| PCB's as Aroclors by Capillary GC | 40 F | | | | | 1 1 |
| 1 OB 3 as Alociois by Capillary GC | <0.5 | ug/l | EPA 8082 | 0.5 | | 01/07/2003 19:08 SAK |
| | | | | | | 1-1 |
| Diosal Banco Orașeiro Iv. 20/FID | 83 | | | | | 1.1 |
| Diesel Range Organics by GC/FID | V 83 | mg/l | EPA 8015M | 0.5 | | 1.1 |
| | | | | | | 1.1 |
| 0 | | | | | | 11 |
| Gasoline Range Organics by GC-FIE | /120 | mg/l | EPA 8015M | 10 | | 01/03/2003 09:22 SAK |
| | | | | | | 11 |
| p 877 | | | | | | 11 |
| Antimony | <100 | ug/l | EPA 6020 | 100 | | 01/29/2003 14:46 LB |
| Arsenic | ~700 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Beryllium | /170 | ug/l | EPA 6020 | 10 | | 01/29/2003 14:46 LB |
| Cadmium | 46 | ug/l | EPA 6020 | 10 | | 01/29/2003 14:46 LB |
| Chromium | 1200 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Copper | ~2100 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Lead | 2000 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Manganese | 28000 | ug/l | EPA 6020 | 80 | | 01/29/2003 14:38 LB |
| Mercury | √ 15 | ug/l | EPA 7470A | 0.5 | | 01/06/2003 11:08 LB |
| Nickel | 1700 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Selenium | <100 | ug/l | EPA 6020 | 100 | | 01/29/2003 14:46 LB |
| Silver | <20 | ug/l | EPA 6020 | 20 | | 01/29/2003 14:46 LB |
| Thallium | <40 | ug/l | EPA 6020 | 40 | | 01/29/2003 14:46 LB |
| Zinc | 6200 | ug/l | EPA 6020 | 100 | | 01/29/2003 14:46 LB 01/29/2003 14:46 LB |
| | | | | 100 | | 01/29/2003 14:46 LB |
| MARTEL NO. | CLIENT | SAMPLE IDENT | TEICATION | | | Comple Deta/Time |
| 91401 0004TB Trip | Blank | DAMI LE IDEM | IFICATION | | | Sample Date/Time 12/26/2002 00:00 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| VOC by GCMS Capillary | | | EPA 8260B | | | 01/02/2003 11:59 JKL |
| N | | | | | | 11 |
| Acetone | ND | ug/l | EPA 8260B | 5 | | 01/02/2003 11:59 JKL |
| Benzene | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 JKL |
| Bromochloromethane | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 JKL |
| Bromodichloromethane | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 JKL |
| Bromoform | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 JKL |
| Bromomethane | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 JKL |
| 2-Butanone | ND | ug/l | EPA 8260B | 5 | | 01/02/2003 11:59 JKI |
| Carbon disulfide | ND | ug/l | EPA 8260B | 1 | | 01/02/2003 11:59 J |

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| Carbon tetrachloride ND ug/l EPA 82608 1 0100 Chlorobenzene ND ug/l EPA 82608 1 0100 Chloroethane ND ug/l EPA 82608 1 0100 Chloromethane ND ug/l EPA 82608 1 0100 Chloromethane ND ug/l EPA 82608 1 0100 Chloromethane ND ug/l EPA 82608 1 0100 cis-1,2-Dichloropropene ND ug/l EPA 82608 1 0100 cis-1,3-Dichloropropene ND ug/l EPA 82608 1 0100 Cyclohexane ND ug/l EPA 82608 1 0100 Cyclohexane ND ug/l EPA 82608 1 0100 1,2-Dichlorobenzene ND ug/l EPA 82608 1 0100 1,2-Dichlorobenzene ND ug/l EPA 82608 1 0100 1,4-Dichlorobenzene ND ug/l | Sample Date/Time 2/26/2002 00:00 | | | TIFICATION | SAMPLE IDEN | | Trip Blank | NO. 0004TB | MARTEL NO 91401 |
|--|-------------------------------------|------|-----------------|------------|-------------|------------|------------|----------------------|--------------------|
| Chlorobenzene | Analysis Date/Time/Initial | Flag | Detection Limit | Method | Test Unit | Test Value | | i d | Compound |
| Chlorobenzene ND ug/l EPA 8260B 1 0100 Chloromane ND ug/l EPA 8260B 1 0100 Chloromethane ND ug/l EPA 8260B 1 0100 Chloromethane ND ug/l EPA 8260B 1 0100 Chloromethane ND ug/l EPA 8260B 1 0100 cis-1,2-Dichloropropene ND ug/l EPA 8260B 1 0100 cis-1,3-Dichloropropene ND ug/l EPA 8260B 1 0100 Cyclohexane ND ug/l EPA 8260B 1 0100 Cycloherobenzene ND ug/l EPA 8260B 1 | 01/02/2003 11:59 JK | | | EPA 8260B | ug/l | ND | , | chloride | Carbon tetrach |
| Chloroethane ND ug/l EPA 8260B 1 01/00 Chloroform ND ug/l EPA 8260B 1 01/00 Chloromethane ND ug/l EPA 8260B 1 01/00 Cis-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/00 Cis-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/00 Cyclohexane ND ug/l EPA 8260B 1 01/00 Cyclohe | 01/02/2003 11:59 JK | | 1 | EPA 8260B | ug/I | ND | | ne | Chlorobenzene |
| Chloroform ND | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/I | ND | | 1 | Chloroethane |
| Chloromethane ND ug/l EPA 8260B 1 01/02 | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | | | Chloroform |
| cis-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/07 cis-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/07 Cyclichexane ND ug/l EPA 8260B 1 01/07 1,2-Dibromo-3-chloropropane ND ug/l EPA 8260B 1 01/07 1,2-Dibromo-dhoromethane ND ug/l EPA 8260B 1 01/07 1,2-Dibromo-dhoromethane ND ug/l EPA 8260B 1 01/07 1,2-Dichlorobenzene ND ug/l EPA 8260B 1 01/07 1,3-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-D | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/I | ND | | ne | Chloromethane |
| cis-1-3-Dichloropropene ND ug/I EPA 8260B 1 01/02 Cyclohexane ND ug/I EPA 8260B 1 01/02 1,2-Dibromo-3-chloropropane ND ug/I EPA 8260B 1 01/02 1,2-Dibromoethane ND ug/I EPA 8260B 1 01/02 1,2-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,3-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,1-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,1-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,1-Dichlorobenzene ND ug/I EPA 8260B 1 01/02 1,1-Dichlorobenze | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | | proethene | cis-1,2-Dichlore |
| Cyclohexane ND ug/l EPA 8260B 1 01/02 1,2-Dibromo-3-chloropropane ND ug/l EPA 8260B 1 01/02 1,2-Dibromo-Gromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,2-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 Dichlorodifluoromethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroetha | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | | propropene | cis-1,3-Dichlor |
| 1,2-Dibromo-3-chloropropane | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | | | Cyclohexane |
| Dibromochloromethane | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | е | 3-chloropropane | 1,2-Dibromo-3- |
| 1,2-Dichloromethane ND ug/l EPA 8260B 1 01/02 1,3-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,3-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloroethane | 01/02/2003 11:59 JKI | | 1 | EPA 8260B | ug/l | ND | | omethane | Dibromochloro |
| 1,2-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,3-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 Dichlorodifluoromethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 5 01/02 Stopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl-2-pentanone ND< | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | thane | 1,2-Dibromoeth |
| 1.3-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 1,1-Dichlorodifluoromethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 Lichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 Stopropylbenzene ND ug/l EPA 8260B 1 01/02 Hethyl-Lebush ND ug/l EPA 8260B 1 01/02 Methyl-Lebush ether ND | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | enzene | 1,2-Dichlorober |
| 1,4-Dichlorobenzene ND ug/l EPA 8260B 1 01/02 Dichlorodifluoromethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroptopane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 5 01/02 Methyl-Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Methyl-2-butyl ether ND <td>01/02/2003 11:59 JKL</td> <td></td> <td>1</td> <td>EPA 8260B</td> <td>ug/l</td> <td>ND</td> <td></td> <td>enzene</td> <td>1,3-Dichlorober</td> | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | enzene | 1,3-Dichlorober |
| Dichlorodifluoromethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethene ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 1sopropylbenzene ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Methyl Cyclohexane ND ug/l EPA 8260B 1 01/02 Methyl-Cyclohexane ND | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | enzene | 1,4-Dichlorober |
| 1,1-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethene ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Sepropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Methyl-Lethyl ether ND ug/l EPA 8260B 1 01/02 Methyl-Lethyl ether ND ug/l EPA 8260B 1 01/02 Methyl-cyclohexane ND | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | | ND | | romethane | Dichlorodifluoro |
| 1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 1,1-Dichloroethene ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-1-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Methyl-2-butyl ether ND ug/l EPA 8260B 1 01/02 Styrene ND ug | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | thane | 1,1-Dichloroeth |
| 1,1-Dichloroethene ND ug/l EPA 8260B 1 01/02 Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-L-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-L-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-L-butyl ether ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | thane | 1,2-Dichloroeth |
| Dichloromethane ND ug/l EPA 8260B 1 01/02 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-L-butyl ether ND ug/l EPA 8260B 5 01/02 Methyl-cyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | thene | 1,1-Dichloroeth |
| 1,2-Dichloropropane ND ug/l EPA 8260B 1 01/02 Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-1-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Methyl-1-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-2-pentanone ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,2-Tetrachloroethane ND ug/l< | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | | ND | | ane | Dichloromethar |
| Ethylbenzene ND ug/l EPA 8260B 1 01/02 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-cyclohexane ND ug/l EPA 8260B 1 01/02 Methyl-cyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,2-Tetrachloroethane ND ug/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | ropane | 1,2-Dichloropro |
| 2-Hexanone ND ug/l EPA 8260B 5 01/02 Isopropylbenzene ND ug/l EPA 8260B 1 01/02 Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 I,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 Trans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02 Trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 Trans-1,3-Trichloroethane ND ug/l EPA 8260B 1 01/02 T,1,2,3-Trichloroethane ND ug/l EPA 8260B 1 01/02 T,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 T,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 T,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 T,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 T,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 Trichloroethane ND ug/l EPA 8260B 1 01/02 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | | ND | | | Ethylbenzene |
| Sopropylbenzene | 01/02/2003 11:59 JKL | | 5 | EPA 8260B | | ND | | | 2-Hexanone |
| Methyl Acetate ND ug/l EPA 8260B 1 01/02 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methylcyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 terans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02 terans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlorobe | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | | ND | | ene | sopropylbenze |
| 4-Methyl-2-pentanone ND ug/l EPA 8260B 5 01/02 Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methylcyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 trans-1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 1,2,3-Trichlorobenzene | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | е | Methyl Acetate |
| Methyl-t-butyl ether ND ug/l EPA 8260B 1 01/02 Methylcyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 trans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 1, | 01/02/2003 11:59 JKL | | 5 | EPA 8260B | | ND | | ntanone | I-Methyl-2-pent |
| Methylcyclohexane ND ug/l EPA 8260B 1 01/02 Styrene ND ug/l EPA 8260B 1 01/02 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 trans-1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02 1 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | ether | Methyl-t-butyl e |
| Styrene ND ug/l EPA 8260B 1 01/02 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 trans-1,2-Dichloroethane ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 9 | exane | Methylcyclohex |
| 1,1,1,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02 Tetrachloroethene ND ug/l EPA 8260B 1 01/02 Toluene ND ug/l EPA 8260B 1 01/02 trans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02 trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/ 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/ 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/ 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/ 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/ 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/ 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 9 | | Styrene |
| 1,1,2,2-Tetrachloroethane ND ug/l EPA 8260B 1 01/02/D1/0 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | hloroethane | ,1,1,2-Tetrachl |
| Tetrachloroethene ND ug/l EPA 8260B 1 01/02/ Toluene ND ug/l EPA 8260B 1 01/02/ trans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02/ trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02/ 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/ 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/ 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/ 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/ 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/ Trichloroethene ND ug/l EPA 8260B 1 01/02/ Trichlorofluoromethane ND ug/l EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | | hloroethane | ,1,2,2-Tetrachl |
| Toluene ND ug/l EPA 8260B 1 01/02/strans-1,2-Dichloroethene trans-1,2-Dichloropropene ND ug/l EPA 8260B 1 01/02/strans-1,3-Dichloropropene trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trifluoroethane 1,1,2-Trichlor-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trifluoroethane 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane 1,2,4-Trichloroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane Trichloroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane Trichloroethane ND ug/l EPA 8260B 1 01/02/strans-1,2-2-trichloroethane Trichloroethane ND < | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 3 | iene | etrachloroethe |
| trans-1,2-Dichloroethene ND ug/l EPA 8260B 1 01/02/l trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/l 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | | oluene |
| trans-1,3-Dichloropropene ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/l 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | loroethene | rans-1,2-Dichlo |
| 1,1,2-Trichlo-1,2,2-trifluoroethane ND ug/l EPA 8260B 1 01/02/l 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | loropropene | rans-1,3-Dichlo |
| 1,2,3-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | iane I | ,2,2-trifluoroethane | ,1,2-Trichlo-1,2 |
| 1,2,4-Trichlorobenzene ND ug/l EPA 8260B 1 01/02/l 1,1,1-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/l 1 crichloroethane ND ug/l EPA 8260B 1 01/02/l 1 crichlorofluoromethane ND ug/l EPA 8260B 1 01/02/l | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | benzene | ,2,3-Trichlorob |
| 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/ Frichloroethene ND ug/l EPA 8260B 1 01/02/ Frichlorofluoromethane ND ug/l EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | benzene | ,2,4-Trichlorob |
| 1,1,2-Trichloroethane ND ug/l EPA 8260B 1 01/02/ Frichloroethene ND ug/l EPA 8260B 1 01/02/ Frichlorofluoromethane ND ug/l EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | ethane | ,1,1-Trichloroe |
| Frichlorofluoromethane ND ug/l EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | ethane | ,1,2-Trichloroe |
| find photids | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | e | richloroethene |
| /invl oblocido | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | methane | richlorofluorom |
| ND ug/I EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | 1 | | inyl chloride |
| Xylene, Total ND ug/l EPA 8260B 1 01/02/ | 01/02/2003 11:59 JKL | | 1 | EPA 8260B | ug/l | ND | ١ | | ylene, Total |
| | 1.1 | | | | | | | | |



| MARTEL NO. 91401 0004TB | CLIENT | SAMPLE IDEN | | Sample Date/Time | | |
|----------------------------|------------|-------------|-----------|------------------|------|-----------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Surrogate Spike , | | | | | | |
| 4-Bromofluorobenzene | 101 | % | EPA 8260B | | | / / 01/02/2003 11:59 JKL |
| Dibromofluoromethane | 115 | % | EPA 8260B | | | 01/02/2003 11:59 JKL |
| Toluene-d8 | 115 | % | EPA 8260B | | | 01/02/2003 11:59 JKL |
| | | | | | | 11 |

1025 Cromwell Bridge Road - Baltimore, Maryland 21286 PH 410-825-7790 FAX 410-821-1054 EMAIL: martel @ martelabs.com JAN17Y0 Page 10 01/31/2003

All Procedures used are in accordance with the following methods:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S. EPA Washington D.C., Third Edition, December 1996. Martel is not responsible for sample collection or transportation to the laboratory.

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Date

Total Pages 25

Project Manager_

Vincent Kayawa

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: | Martel | Labs, JDS | | Contract: | MDE | | MW 1 | drum |
|-----------------|--------|-----------|-------------------|--------------|------------|------|------------|------|
| Lab Code: | | Ca | se No.: | SAS N | 0.: | S | DG No.: | |
| Matrix: (soil/w | ater) | WATER | _ | La | b Sampl | | 91401 3 | |
| Sample wt/vo | l: | 1000 | (g/ml) ML | | b File ID | | C3010605.E |) |
| Level: (low/m | ed) ' | LOW | | — Da | ate Recei | ved: | 12/26/2002 | |
| % Moisture: | | dec | anted: (Y/N) | | | | 1/2/2003 | |
| Concentrated | Extrac | t Volume: | 1 (uL) | | | | 1/6/2003 | |
| Injection Volur | me: 1 | .0 (uL) | 15 | | lution Fac | | | |
| GPC Cleanup | (Y/N) | N | pH: | | | | | |
| Number TICs | found: | 7 | | CONCENT | | UNIT | | |
| | | | | (-9, - 0, 49 | ,,,,a), | 00/2 | | |
| CAS NUMBE | R | COMPOL | JND NAME | | RT | ES | T. CONC. | Q |
| 1. 000611- | | | 1-ethyl-2-methyl- | | 6.67 | 11-2 | 1400 | JN |
| 2. 000622- | 96-8 | Benzene, | 1-ethyl-4-methyl- | | 6.87 | | 290 | JN |

3. 000124-18-5

4. 000622-97-9

5. 000496-11-7

6. 000095-13-6

7. 000934-80-5

Decane

Indane

Indene

Benzene, 1-ethenyl-4-methyl-

Benzene, 4-ethyl-1,2-dimethyl-

5860

290

230

500

1600

1300

540

JN

JN

JN

JN

JN

JN

6.87

6.96

7.33

7.50

7.59

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Ma | rtel Labs, JDS | Contract: MDE | BLK_w |
|--------------------|---------------------|--------------------|------------|
| Lab Code: | Case No.: | SAS No.: SI | DG No.: |
| Matrix: (soil/wate | r) WATER | Lab Sample ID: | Blank |
| Sample wt/vol: | 1000 (g/ml) ML | Lab File ID: | C3010603.D |
| Level: (low/med) | LOW | Date Received: | 12/26/2002 |
| % Moisture: | decanted: (Y/N) | N Date Extracted: | 1/2/2002 |
| Concentrated Ext | ract Volume: 1 (uL) | Date Analyzed: | 1/6/2003 |
| Injection Volume: | 1.0 (uL) | Dilution Factor: | 1.0 |
| GPC Cleanup: (Y | /N) <u>N</u> pH: | | |
| Number TICs four | nd:0 | CONCENTRATION UNIT | |
| CAS NUMBER | COMPOUND NAME | RT ES | T. CONC. Q |

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| | BLK_w |
|---|-------|
| S | |

| Lab Code: Case No.: SAS No.: SDG No.: Matrix: (soil/water) WATER Lab Sample ID: Blank Sample wt/vol: 1000 (g/ml) ML Lab File ID: C3010603.D Level: (low/med) LOW Date Received: 12/26/2002 % Moisture: decanted:(Y/N) N Date Extracted: 1/2/2002 Concentrated Extract Volume: 1 (uL) Date Analyzed: 1/6/2003 Injection Volume: 1.0 (uL) Dilution Factor: 1.0 GPC Cleanup: (Y/N) N pH: | Lab Name: | Martel Lai | os, JDS | | | Contract: MDE | | |
|---|-----------------|----------------|---------|--------------|---|---------------|---------|------------|
| Sample wt/vol: 1000 (g/ml) ML Lab File ID: C3010603.D Level: (low/med) LOW Date Received: 12/26/2002 % Moisture: decanted:(Y/N) N Date Extracted: 1/2/2002 Concentrated Extract Volume: 1 (uL) Date Analyzed: 1/6/2003 Injection Volume: 1.0 (uL) Dilution Factor: 1.0 | Lab Code: | | C | ase No.: | | SAS No.: | DG No.: | |
| Level: (low/med) LOW Date Received: 12/26/2002 % Moisture: decanted:(Y/N) N Date Extracted: 1/2/2002 Concentrated Extract Volume: 1 (uL) Date Analyzed: 1/6/2003 Injection Volume: 1.0 (uL) Dilution Factor: 1.0 | Matrix: (soil/w | ater) <u>V</u> | VATER | _ | | Lab Sampl | e ID: | Blank |
| % Moisture: decanted:(Y/N) N Date Extracted: 1/2/2002 Concentrated Extract Volume: 1 (uL) Date Analyzed: 1/6/2003 Injection Volume: 1.0 (uL) Dilution Factor: 1.0 | Sample wt/vol | : <u>1</u> | 000 | (g/ml) ML | | Lab File ID | : | C3010603.D |
| Concentrated Extract Volume: 1 (uL) Date Analyzed: 1/6/2003 Injection Volume: 1.0 (uL) Dilution Factor: 1.0 | Level: (low/m | ed) <u>L</u> | OW | _ | | Date Recei | ved: | 12/26/2002 |
| Injection Volume: 1.0 (uL) Dilution Factor: 1.0 | % Moisture: | <u> </u> | de | canted:(Y/N) | Ν | Date Extra | cted: | 1/2/2002 |
| | Concentrated | Extract Vo | olume: | 1 (uL) | | Date Analy | zed: | 1/6/2003 |
| GPC Cleanup: (Y/N) N pH: | Injection Volur | me: <u>1.0</u> | (uL) | | | Dilution Fa | ctor: | 1.0 |
| | GPC Cleanup: | (Y/N) | N | pH: | | | | |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND | (ug/L or ug/Kg) | ug/Kg) UG/L | | |
|----------------------------------|------------------------|-----------------|-------------|---|--|
| 3855-82-1 N-Nitrosodimethylamine | | ine | 5 | U | |
| 111-44-4 | bis(2-Chloroethyl)ethe | | 5 | U | |
| 108-95-2 | Phenol | | 5 | U | |
| 95-57-8 | 2-Chlorophenol | | 5 | U | |
| 541-73-1 | 1,3-Dichlorobenzene | | 5 | U | |
| 106-46-7 | 1,4-Dichlorobenzene | | 5 | U | |
| 95-50-1 | 1,2-Dichlorobenzene | | 5 | U | |
| 95-50-1 | Benzyl alcohol | | 5 | U | |
| 108-60-1 | bis(2-chloroisopropyl) | ether | 5 | U | |
| 67-72-1 | 2-Methylphenol | | 5 | U | |
| 67-72-1 | Hexachloroethane | | 5 | U | |
| 621-64-7 | N-Nitroso-di-n-propyla | mine | 5 | U | |
| 67-72-1 | 4-Methylphenol | | 5 | U | |
| 98-95-3 | Nitrobenzene | | 5 | U | |
| 78-59-1 | Isophorone | | 5 | U | |
| 88-75-5 | 2-Nitrophenol | | 5 | U | |
| 105-67-9 | 2,4-Dimethylphenol | | 5 | U | |
| 111-91-1 | bis(2-Chloroethoxy)m | ethane | 5 | U | |
| 120-83-2 | 2,4-Dichlorophenol | ottiuito | 5 | U | |
| 120-82-1 | 1,2,4-Trichlorobenzen | e | 5 | U | |
| 91-20-3 | Naphthalene | | 5 | U | |
| | 4-Chloroaniline | | 5 | U | |
| 87-68-3 | Hexachlorobutadiene | | 5 | U | |
| 59-50-7 | 4-Chloro-3-methylphe | nol | 5 | U | |
| | 2-Methylnaphthalene | | 5 | U | |
| 77-47-4 | Hexachlorocyclopenta | diene | 5 | U | |
| 88-06-2 | 2,4,6-Trichlorophenol | 4.0110 | 5 | U | |
| 67-72-1 | 2,4,5-Trichlorophenol | | 5 | U | |
| 91-58-7 | 2-Chloronaphthalene | | 5 | U | |
| 88-06-2 | 2-Nitroaniline | | 5 | Ū | |
| 208-96-8 | Acenaphthylene | | 5 | U | |
| 131-11-3 | Dimethylphthalate | | 5 | Ü | |
| 606-20-2 | 2,6-Dinitrotoluene | | 5 | U | |
| | 3-Nitroaniline | | 5 | U | |
| 83-32-9 | Acenaphthene | | 5 | U | |
| 51-28-5 | 2,4-Dinitrophenol | | 5 | U | |
| 132-64-9 | Dibenzofuran | | 5 | U | |

1C

| EPA | SAMPI | LE NO |
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|-----|-------|-------|

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| | SEN | AIVOLATILE | ORGANICS | ΛΝΛΙ | Vele DA | TA CLIE | | | WIN EE IVE |
|--|-----------|------------|---|---------------|----------|------------|--------|------------|------------|
| SEMIVOLATILE ORGANICS Lab Name: Martel Labs, JDS | | | | Contract: MDE | | | BLK_w | | |
| Lab Code: | | Case | No.: | | SAS No | .: | SE | OG No.: | |
| Matrix: (soil/ | water) | WATER | | | Lab | Sample | ID: | - Blank | |
| Sample wt/vo | ol: | 1000 | (g/ml) ML | | | | | C301060 | 3.D |
| Level: (low/r | med) | LOW | 56 12 A.E. C. | | | | | 12/26/200 | |
| % Moisture: | | deca | nted:(Y/N) | Ν | | | | 1/2/2002 | |
| Concentrated | d Extract | Volume: 1 | (uL) | | -0.000 | | - | 1/6/2003 | |
| Injection Volu | ume: 1. | 0 (uL) | | | | ition Fact | | | |
| GPC Cleanu | p: (Y/N) | Np | H: | Si | | | - | | |
| | | | | | CONCE | NTRATI | ON L | JNITS: | |
| CAS NO |). | COMPOL | JND | | (ug/L or | ug/Kg) | UG | /L | Q |
| 121-14 | -2 | 2,4-Dini | trotoluene | | | | | 5 | U |
| 100-02 | 2-7 | 4-Nitrop | | | | | | 5 | U |
| 86-73- | 7 | Fluoren | | | | | | 5 | U |
| 7005-7 | 2-3 | | ophenyl-phen | vleth | er | | | 5 | U |
| 84-66-2 | | | hthalate | Jiotii | 01 | | 450175 | 5 | |
| | Seri | 4-Nitroa | | | | | | 5 | U |
| | | | | | | | | | |

4,6-Dinitro-2-methylphenol

4-Bromophenyl-phenylether

n-Nitrosodiphenylamine

Hexachlorobenzene

Pentachlorophenol

Di-n-butylphthalate

Butylbenzylphthalate

3,3'-Dichlorobenzidine

Phenanthrene

Anthracene

Fluoranthene

Carbazole

Pyrene

Benzidine

534-52-1

86-30-6

101-55-3

118-74-1

87-86-5

85-01-8

120-12-7

84-74-2

206-44-0

129-00-0

3855-82-1

85-68-7

91-94-1

56-55-3 Benzo[a]anthracene 5 U 218-01-9 Chrysene 5 U 117-81-7 bis(2-Ethylhexyl)phthalate 2 J 117-84-0 Di-n-octylphthalate 5 U 205-99-2 Benzo[b]fluoranthene 5 U 207-08-9 Benzo[k]fluoranthene 5 U 50-32-8 Benzo[a]pyrene 5 U 193-39-5 Indeno[1,2,3-cd]pyrene 5 U 53-70-3 Dibenz[a,h]anthracene 5 U 191-24-2 Benzo[g,h,i]perylene 5 U

FORM I SV-2

3/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| Lab Name: | Martel | Labs, JDS | | С | ontract: M | DE | LCS |
|-----------------|--------------|-----------|--------------|---|------------|------------|------------|
| Lab Code: | | C | ase No.: | | SAS No.: | S | DG No.: |
| Matrix: (soil/v | vater) | WATER | | | Lab S | ample ID: | 7 |
| Sample wt/vo | ol: | 1000 | (g/ml) ML | | | ile ID: | C3010604.D |
| Level: (low/n | ned) | LOW | | | Date F | Received: | 12/26/2002 |
| % Moisture: | | de | canted:(Y/N) | Ν | | Extracted: | |
| Concentrated | Extract | Volume: | 1 (uL) | | | Analyzed: | |
| Injection Volu | me: <u>1</u> | .0 (uL) | | | | n Factor: | |
| GPC Cleanup |): (Y/N) | N | pH: | | | | |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND | (ug/L or ug/Kg) UG/L | 7.0 |
|-----------|--------------------------|----------------------|----------|
| | | (ug/2 or ug/Ng) OG/L | Q |
| 3855-82-1 | N-Nitrosodimethylamin | e . | 5 U |
| 111-44-4 | bis(2-Chloroethyl)ether | | 5 U |
| 108-95-2 | Phenol | 45 | |
| 95-57-8 | 2-Chlorophenol | 77 | |
| 541-73-1 | 1,3-Dichlorobenzene | | |
| 106-46-7 | 1,4-Dichlorobenzene | 42 | |
| 95-50-1 | 1,2-Dichlorobenzene | | |
| 95-50-1 | Benzyl alcohol | | |
| 108-60-1 | bis(2-chloroisopropyl)et | her 5 | |
| 67-72-1 | 2-Methylphenol | 5 | |
| 67-72-1 | Hexachloroethane | 5 | |
| 621-64-7 | N-Nitroso-di-n-propylam | nine 54 | |
| 67-72-1 | 4-Methylphenol | 5 | |
| 98-95-3 | Nitrobenzene | 5 | |
| 78-59-1 | Isophorone | 5 | |
| 88-75-5 | 2-Nitrophenol | 5 | |
| 105-67-9 | 2,4-Dimethylphenol | 5 | |
| 111-91-1 | bis(2-Chloroethoxy)metl | nane 5 | |
| 120-83-2 | 2,4-Dichlorophenol | 5 | - |
| 120-82-1 | 1,2,4-Trichlorobenzene | | |
| 91-20-3 | Naphthalene | | |
| | 4-Chloroaniline | | |
| 87-68-3 | Hexachlorobutadiene | <u>5</u> | U |
| 59-50-7 | 4-Chloro-3-methylpheno | | <u>U</u> |
| | 2-Methylnaphthalene | | E_ |
| 77-47-4 | Hexachlorocyclopentadio | 5 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | 9 | U |
| 67-72-1 | 2,4,5-Trichlorophenol | 5 | U |
| 91-58-7 | 2-Chloronaphthalene | 5 | U |
| 88-06-2 | 2-Nitroaniline | 5 | U |
| 208-96-8 | Acenaphthylene | 5 | U |
| 131-11-3 | Dimethylphthalate | 5 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 5 | U |
| | 3-Nitroaniline | 5 | U |
| 83-32-9 | Acenaphthene | 5 | U |
| 51-28-5 | 2,4-Dinitrophenol | 48 | |
| 132-64-9 | Dibenzofuran | 5 | U |
| | Distriction | 5 | U |





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| Q.E. | TU TU E ODGANIGO ANA | 13/010 | EPA SA | AMPLE NO |
|----------------------|--------------------------|-------------------|---|----------|
| | EMIVOLATILE ORGANICS ANA | | | |
| Lab Name: Martel | Labs, JDS | Contract: MDE | | LCS |
| Lab Code: | Case No.: | SAS No.: | SDG No.: | |
| Matrix: (soil/water) | WATER | Lab Sample I | | |
| Sample wt/vol: | 1000 (g/ml) ML | Lab File ID: | | |
| Level: (low/med) | | | *************************************** | |
| | | Date Received | | |
| % Moisture: | decanted:(Y/N) N | Date Extracted | d: 1/2/2003 | |
| Concentrated Extrac | t Volume: 1 (uL) | Date Analyzed | | |
| Injection Volume: | | Dilution Factor | | |
| | NpH: | Dilation Factor | . 1.0 | |
| CASNO | COMPOUND | CONCENTRATIO | | |
| CAS NO. | COMPOUND | (ug/L or ug/Kg) L | JG/L | Q |
| 121-14-2 | 2,4-Dinitrotoluene | | 44 | |
| 100-02-7 | 4-Nitrophenol | | 46 | |
| 86-73-7 | Fluorene | | 5 | U |
| 7005-72-3 | 4-Chlorophenyl-phenyleth | ner | 5 | U |
| 84-66-2 | Diethylphthalate | | 5 | U |
| | 4-Nitroaniline | | 5 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphen | ol | 5 | U |
| 86-30-6 | n-Nitrosodiphenylamine | | 5 | U |
| 101-55-3 | 4-Bromophenyl-phenyleth | ner | 5 | U |
| 118-74-1 | Hexachlorobenzene | | 5 | U |
| 87-86-5 | Pentachlorophenol | | 72 | |
| 85-01-8 | Phenanthrene | | 5 | U |
| 120-12-7 | Anthracene | | 5 | U |
| | Carbazole | | 5 | U |
| 84-74-2 | Di-n-butylphthalate | | 5 | U |
| 206-44-0 | Fluoranthene | | 5 | U |
| 129-00-0 | Pyrene | | 50 | 0 |
| 2055 20 4 | | | 00 | |

3855-82-1

85-68-7

91-94-1

56-55-3

218-01-9

117-81-7

117-84-0

205-99-2

207-08-9

50-32-8

193-39-5

53-70-3

191-24-2

Benzidine

Chrysene

Butylbenzylphthalate

Benzo[a]anthracene

Di-n-octylphthalate

Benzo[b]fluoranthene

Benzo[k]fluoranthene

Indeno[1,2,3-cd]pyrene

Dibenz[a,h]anthracene

Benzo[g,h,i]perylene

Benzo[a]pyrene

3,3'-Dichlorobenzidine

bis(2-Ethylhexyl)phthalate

FORM I SV-2

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel, | JDS | | Contract: N | MDE | MW | 2 |
|----------------------|-------------|---------------|------------------------------|-------------|------------|-------------|
| Lab Code: Case No.: | | e No.: | SAS No.: | S | DG No.: | |
| Matrix: (soil/water) | WATER | | Lab S | Sample ID: | 91401 1 | |
| Sample wt/vol: | 25.0 | (g/ml) ML | Lab F | ile ID: | A3010206.D | |
| Level: (low/med) . | LOW | 5000 50000 | Date | Received: | 12/26/02 | - |
| % Moisture: not dec. | | | Date | Analyzed: | 1/2/03 | |
| GC Column: | ID: | (mm) | | on Factor: | 1.0 | |
| Soil Extract Volume: | | (uL) | | diquot Volu | | (uL) |
| Number TICs found: | 10 | | ONCENTRATIC g/L or ug/Kg) | UG/L | | |
| CAS NO. | COMPOU | ND NAME | F | RT ES | ST. CONC. | Q |
| 1. 000096-37-7 | Cyclopenta | ne, methyl- | | 5.98 | 41 | JN |
| 2. 000693-89-0 | Cyclopenter | ne, 1-methyl- | | 6.92 | 35 | JN |
| 3. 000110-82-7 | Cyclohexan | е | | 7.12 | 120 | JN |
| 4. 002597-49-1 | Cyclobutane | e, ethenyl- | | 7.91 | 230 | JN |

5. 001541-20-4

6. 034462-28-7

7. 000108-87-2

9. 001192-37-6

10. 000591-49-1

000591-47-9

Bi-2-cyclohexen-1-yl

Cyclohexane, methyl-

Cyclohexene, 4-methyl-

Cyclohexene, 1-methyl-

Cyclohexane, methylene-

Cyclopropane, trimethylmethylen

1020

47

41

160

120

150

76

JN

JN

JN

JN

JN

JN

8.23

8.62

8.94

9.72

9.88

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel, | JDS | Contract: MDE | MW | 1 |
|----------------------|----------------------|---|------------|------|
| Lab Code: | Case No.: | SAS No.: S | DG No.: | |
| Matrix: (soil/water) | WATER | Lab Sample ID: | 91401 2 | |
| Sample wt/vol: | 25.0 (g/ml) ML | Lab File ID: | A3010207.D | |
| Level: (low/med) . | LOW | Date Received: | 12/26/02 | |
| % Moisture: not dec. | | Date Analyzed: | 1/2/03 | |
| GC Column: | ID: (mm) | # 15 (15 (15 (15 (15 (15 (15 (15 (15 (15 | 1.0 | |
| Soil Extract Volume: | (uL) | Soil Aliquot Volu | me: | (uL) |
| Number TICs found: | 9 | CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L | | |
| CAS NO. | COMPOUND NAME | RT ES | T. CONC. | Q |
| 1. 000115-11-7 | 1-Propene, 2-methyl- | 2.45 | 24 | JN |
| 2. 000109-67-1 | 1-Pentene | 3.16 | 32 | JN |
| 3. 000627-20-3 | 2-Pentene, (Z)- | 3.33 | 24 | JN |
| 4. 000513-35-9 | 2-Butene, 2-methyl- | 3.53 | 95 | JN |
| 5. 000142-29-0 | Cyclopentene | 4.43 | 26 | JN |
| 6. 000110-83-8 | Cyclohexene | 7.94 | 120 | JN |
| 7. 000496-11-7 | Indane | 20.24 | 48 | JN |
| 8. 000095-13-6 | Indene | 20.71 | 24 | INI |

9. 015677-15-3 Cycloprop[a]indene, 1,1a,6,6a-tet

419

16

JN

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

| EPA S | SAMPL | E | NO. |
|-------|-------|---|-----|
|-------|-------|---|-----|

| Lab Name: Martel, | JDS | | Contract: | MDE | MW 1 d | rum |
|----------------------|--------------|-----------------|---------------------------|------------------|------------|------|
| Lab Code: | Case | No.: | SAS No. | | SDG No.: | |
| Matrix: (soil/water) | WATER | | Lab | Sample ID | : 914013 | |
| Sample wt/vol: | 25.0 | (g/ml) ML | Lab | File ID: | A3010215.D | |
| Level: (low/med) | LOW | | Date | e Received | | - |
| % Moisture: not dec. | | | | Analyzed | | |
| GC Column: | ID: | (mm) | | tion Factor | | |
| Soil Extract Volume: | | (uL) | | Aliquot Vo | | (uL) |
| Number TICs found: | 10 | | NCENTRATI /L or ug/Kg) | ON UNITS UG/L | : | |
| CAS NO. | COMPOUN | D NAME | | RT E | ST. CONC. | Q |
| 1. 002597-49-1 | Cyclobutane | ethenyl- | | 7.88 | 170 | JN |
| 2. 000611-14-3 | Benzene, 1-e | ethyl-2-methyl- | | 17.40 | 1100 | JN |
| 3. 000622-96-8 | Benzene, 1-e | ethyl-4-methyl- | | 18.10 | 220 | JN |
| 4. 000100-80-1 | Benzene, 1-e | ethenyl-3-methy | I- | 19.61 | 220 | JN |
| 5. 000873-49-4 | Benzene, cyc | clopropyl- | | 20.23 | 1700 | JN |
| 6. 000095-13-6 | Indene | | | 20.69 | 1200 | JN |
| 7. 000767-59-9 | 1H-Indene, 1 | -methyl- | | 23.50 | 310 | JN |

2-Methylindene

Naphthalene, 2-methyl-

Bicyclo[4.4.1]undeca-1,3,5,7,9-pe

8. 002177-47-1

10. 002443-46-1

000091-57-6

9.

5590

200

300

170

JN

JN

JN

23.78

27.63

VOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel, | JDS | | Contract: | MDE | Trip B | lk |
|----------------------|--------|-----------|--------------------------|-------------------|------------|-------------|
| Lab Code: | Ca | se No.: | SAS No.: | : S | DG No.: | |
| Matrix: (soil/water) | WATER | _ | Lab | Sample ID: | 91401 4TB | |
| Sample wt/vol: | 25.0 | (g/ml) ML | Lab | File ID: | A3010218.D | |
| Level: (low/med) . | LOW | _ | Date | e Received: | 12/26/02 | |
| % Moisture: not dec. | | | Date | Analyzed: | 1/2/03 | |
| GC Column: | ID: | (mm) | Dilut | tion Factor: | 1.0 | |
| Soil Extract Volume: | | (uL) | Soil | Aliquot Volu | me: | (uL) |
| Number TICs found: | 0 | | ONCENTRATIONS (See 1971) | ON UNITS: UG/L | | |
| CAS NO. | COMPOL | IND NAME | | RT ES | T. CONC. | Q |

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VOLATILE ORGANICS ANALYSIS DATA SHEET

| EPA | SAMPL | F NO |
|------------|------------|------|
| - 1 1 | C/ (IVII L | 110 |

(uL)

| Lab Name: | Martel, | | | | Contract: | | BLK_w |
|-----------------|---------|-------|----------|----|-----------|-----------|------------|
| Lab Code: | - | C | ase No.: | | SAS No | .: | SDG No.: |
| Matrix: (soil/v | water) | WATER | | | Lat | Sample ID | : Blank |
| Sample wt/vo | ol: | 25.0 | (g/ml) | ML | Lat | File ID: | A3010204 D |

A3010204.D Level: (low/med) LOW Date Received: 12/26/02

(g/ml) ML

% Moisture: not dec. Date Analyzed: 1/2/03

GC Column: ID: (mm) Dilution Factor: 1.0 Soil Extract Volume: (uL) Soil Aliquot Volume:

CONCENTRATION LINITS

Lab File ID:

| | CONCENTRATION UNITS: | | | | |
|--|----------------------|-----------------|------|---|---|
| CAS NO. | COMPOUND | (ug/L or ug/Kg) | UG/L | | Q |
| | Dichlorodifluoro | methane | | 1 | U |
| | Chloromethane | | | 1 | U |
| - | Vinyl chloride | | | 1 | U |
| The second secon | Bromomethane | | | 1 | Ü |
| | Chloroethane | | | 1 | U |
| | Trichlorofluorom | ethane | | 1 | Ü |
| | Acrolein | | | 1 | U |
| | 1,1-Dichloroethe | ene | | 1 | Ü |
| | Acetone | | | 5 | Ü |
| | Iodomethane | | | 1 | Ū |
| | Carbon disulfide | | | 1 | Ü |
| | Methylene chlor | ide | | 1 | Ü |
| | MTBE | | | 1 | Ü |
| | trans-1,2-Dichlo | roethene | | 1 | Ü |
| | Acrylonitrile | | | 1 | U |
| | 1,1-Dichloroetha | ne | | 1 | U |
| | Vinyl acetate | | | 1 | Ü |
| | 2,2-Dichloroprop | ane | | 1 | U |
| | cis-1,2-Dichloroe | | | 1 | U |
| | 2-Butanone | | | 5 | U |
| | Bromochloromet | hane | | 1 | U |
| | Chloroform | | | 1 | U |
| | 1,1,1-Trichloroet | hane | | 1 | U |
| | Carbon tetrachlo | ride | | 1 | U |
| | 1,1-Dichloroprop | | | 1 | U |
| | Benzene | | | 1 | U |
| | 1,2-Dichloroetha | ne | | 1 | U |
| | Trichloroethene | | | 1 | U |
| | 1,2-Dichloroprop | ane | | 1 | Ü |
| | Dibromomethane | | | 1 | U |
| | Bromodichlorome | ethane | | 1 | Ü |
| | cis-1,3-Dichlorop | ropene | | 1 | U |
| | 4-Methyl-2-penta | | | 5 | Ü |
| | Toluene | | | 1 | Ü |
| | trans-1,3-Dichlor | opropene | | 1 | U |
| | 1,1,2-Trichloroeth | nane | | 1 | U |
| | 1,3-Dichloroprop | | | 1 | U |
| | Tetrachloroethen | | | 1 | U |
| | 2-Hexanone | | | 5 | U |

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EPA SAMPLE NO.

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| | /OI ATH E | 20044400 | | | | LI A O | WIN LL | 140. |
|----------------------|-----------|---------------|---------------|---------|--------------|----------|--------|------|
| Lab Name: Martel, | | JRGANICS | ANALYSIS DA | | | В | LK_w | |
| Lab Code: | Ca | se No.: | SAS | No. | : S | DG No.: | | |
| Matrix: (soil/water) | WATER | - | I | Lab | Sample ID: | Blank | - | |
| Sample wt/vol: | 25.0 | (g/ml) ML | l | Lab | File ID: | A301020 | 4.D | |
| Level: (low/med) | LOW | _ | [| Date | e Received: | 12/26/02 | | |
| % Moisture: not dec. | * | | [| Date | e Analyzed: | 1/2/03 | | |
| GC Column: | ID: _ | (mm) | ו | Dilu | tion Factor: | 1.0 | | |
| Soil Extract Volume: | | (uL) | 5 | Soil | Aliquot Volu | me: | | (uL) |
| | | | CONCENTR | ATI | ON UNITS: | | | |
| CAS NO. | COMP | OUND | (ug/L or ug/K | | | | Q | |
| | Dibro | mochlorome | ethane | | | 1 | U | |
| | Chlor | obenzene | | | | 1 | U | |
| | 1,2-D | ibromoethar | ne | 1,50,50 | | 1 | U | |
| | Ethyl | benzene | | | | 1 | U | |
| | 1,1,1 | ,2-Tetrachlor | roethane | | | 1 | U | |
| | m,p-> | Kylene | | | | 1 | U | |
| | o-Xyl | ene | | | | 1 | U | |
| | Styre | ne | | | | 1 | U | |

Bromoform

Isopropylbenzene

3A WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

| Lab Name: | Martel, JDS | | Contract: | EAENG | | |
|--------------|-----------------|--------|-----------|-------|----------|--|
| Lab Code: | Cas | e No.: | SAS No | | SDG No.: | |
| Matrix Spike | - EPA Sample No | 14010 | | | - | |

| COMPOUND | SPIKE ADDED | The second secon | MS CONCENTRATION | MS % | QC LIMITS |
|--------------------|----------------|--|---------------------|---------|--------------|
| COMPOUND | (ug/L) | (ug/L) | (ug/L) | REC# | REC. |
| 1,1-Dichloroethene | 20 | 0.0 | 16 | 80 | 60 - 130 |
| Benzene | 20 | 0.030 | 18 | 90 | 60 - 130 |
| Trichloroethene | 20 | 0.0 | 18 | 90 | 60 - 130 |
| Toluene | 20 | 0.0 | 20 | 100 | 60 - 130 |
| Chlorobenzene | 20 | 0.0 | 18 | 90 | 60 - 130 |

| | SPIKE ADDED | MSD CONCENTRATION | MSD % | % | QC I | LIMITS |
|--------------------|----------------|----------------------|----------|------|------|----------|
| COMPOUND | (ug/L) | (ug/L) | REC# | RPD# | RPD | REC. |
| 1,1-Dichloroethene | 20 | 18 | 90 | 12 | 35 | 60 - 130 |
| Benzene | 20 | 20 | 100 | 11 | 35 | 60 - 130 |
| Trichloroethene | 20 | 22 | 110 | 20 | 35 | 60 - 130 |
| Toluene | 20 | 24 | 120 | 18 | 35 | 60 - 130 |
| Chlorobenzene | 20 | 20 | 100 | 11 | 35 | 60 - 130 |

RPD: 0 out of 5 outside limits

Spike Recovery: 0 out of 10 outside limits

| COMMENTS: | |
|-----------|--|
| | |

[#] Column to be used to flag recovery and RPD values with an asterisk

^{*} Values outside of QC limits

Maryland Department of the Environment 1800 Eashington Boulevard

くつかり

Baltimore, Maryland 21230 CHAIN OF CUSTODY FORM

| | CHAIN OF CUSTODY FORM |
|---|---|
| Project Name: Frederick, Site I No. 65586 | Purchase Order / LOG IN #: |
| Client Organization: Maryland Department of the Environment | Project Manager: Scott Morgan |
| Address to Send Results: as above | |
| | |
| Client Fax for Sending Data: 410 537 3472 | |
| 7/10:/0:/- | Lab Contact / Project Manager: Vince Kuyawa |
| Client Tel for Follow-un: 410 537 3493 | |
| C. C | Client Sampler / Recorder: S. Morgan, P. Andersen |
| | |
| | |

| Sample ID | Samolino | 0 | Matrix | | | | And the Control of th | | | 4 na live de |
|-----------|----------|---------------|--------|-------|-------|------|--|-----------------|----------|--|
| | | | | | | - 0 | HONL | - < | | one of the contract of the con |
| | Date | Time | Soll | Water | Depth | Site | HCL | 1 Hmbe 11 Pushe | 1 Plushe | |
| MW-2 | 12/27/01 | Je 1030 | | メ | NΑ | Σ | 2 | 1 | | V065 0214 |
| MW-1 | 12/21 | 12/21/12 1000 | | × | NA | I | 3 | ١ | | 1/0/ 5 00/1 |
| MW-1 dim | 12/240 | (000) | | X | 1/4 | H | O | n | _ | 11 <1.160 |
| | | | | | | | |) | | - |
| | | | | | | | | | | Material Pushilly 119417 |
| , | | | | - | - | | | | | Contaminated at DAHIS |
| 70.10 | 12/0/11 | 1 | | .К | ΛA | I | _ | | | |

| Chain of Custody Record | | | |
|-------------------------|------------------------|--------------|---------------|
| Relinquished by: | Date/Hr: 12/τ 8/ τ(| Received by: | Date/Hr: |
| Received by: | Date/Hr: | | 0211/20-22-71 |
| | | | |





Certificate of Analysis

Friday, January 31, 2003

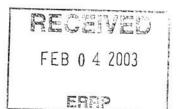
Prepared expressly for:

State of Maryland - MDE 1800 Washington Blvd Suite 625

Baltimore, Maryland 21230

Attention: Scott Morgan Report for Lab No: 91290. Samples received by Martel.

Project Identification: Frederick - Site 1



| MARTEL NO 91290 | O. 000001 | FSS-1 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 12:00 |
|--------------------|-----------------|-------|-------------------|-------------|------------|-----------------|-------------|-----------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Base/Neutral/A | cid Extractable | S | | | EPA 8270C | | | 12/31/2002 16:24 JKL |
| | | | | | | | | 11 |
| Acenaphthene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Acenaphthylen | е | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Anthracene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzo[a]anthra | cene | | ~2000 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzo[b]fluorar | nthene | | ~1400 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzo[k]fluorar | nthene | | [~] 1600 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzo[ghi]peryl | lene | | 1500 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzo[a]pyrene | Э | | _2300 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Bis-(2-chloroeth | noxy)methane | | NĎ | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Bis-(2-chloroeth | nyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Bis(2-chloroison | propyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Bromophenyl | phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Benzyl butyl ph | thalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Carbazole | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Chloroaniline | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Chloro-3-meth | hylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Chloronaphth | alene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Chlorophenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Chlorophenyl | phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Chrysene | | | /2300 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Dibenz[a,h]anth | racene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Dibenzofuran | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Di-n-butyl phtha | alate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 1,2-Dichloroben | zene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 1,3-Dichloroben | zene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 1,4-Dichloroben | zene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 3,3'-Dichlorober | nzidine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,4-Dichlorophe | enol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Diethyl phthalate | е | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,4-Dimethylphe | enol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |



| MARTEL NO. 91290 000001 | CLIENT FSS-1 | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 12:00 |
|------------------------------|-----------------|-------------|-------------|-----------------|------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Dimethyl phthalate | , ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKI |
| 4,6-Dinitro-2-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKI |
| 2,4-Dinitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,4-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,6-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Di-n-octyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Bis-(2-ethylhexyl)-phthalate | € 1200 | ug/kg | EPA 8270C | 500 | В | 12/31/2002 16:24 JKL |
| Fluoranthene | ~2200 | ug/kg | EPA 8270C | 500 | P. | 12/31/2002 16:24 JKL |
| Fluorene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Hexachlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Hexachlorocyclopentadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Hexachloroethane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Indeno-(1,2,3-cd)-pyrene | 1200 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Isophorone | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Methylnaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Naphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 3-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Nitrobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 4-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| N-Nitrosodiphenylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| N-Nitroso-di-N-propylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Pentachlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Phenanthrene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Phenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| Pyrene | 3100 | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| ,2,4-Trichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,4,5-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| 2,4,6-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| N-Nitrosodimethylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| dexachlorobutadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 16:24 JKL |
| | | | | | | 11 |
| Surrogate Spike | | | | | | 11 |
| | | | | | | 11 |
| ,4,6-Tribromophenol | 108 | % | EPA 8270C | | | 12/31/2002 16:24 JKL |
| -Fluorobiphenyl | 100 | % | EPA 8270C | | | 12/31/2002 16:24 JKL |
| -Fluorophenol | 115 | % | EPA 8270C | | | 12/31/2002 16:24 JKL |
| litrobenzene-d5 | 99 | % | EPA 8270C | | | 12/31/2002 16:24 JKL |
| henol-d6 | 114 | % | EPA 8270C | | | 12/31/2002 16:24 JK |
| erphenyl-d14 | 110 | % | EPA 8270C | | | 12/31/2002 16:24 JK |



| MARTEL NO. 91290 000001 | CLIENT | SAMPLE IDEN | TIFICATION | | Sample Date/Time |
|-------------------------------------|------------|---|------------|-------------------|---------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag Analysis Date/Time/Initial |
| | | | | | _i |
| Organochlorine Pesticides and PCB's | | | EPA 8081A | | 01/01/2003 06:50 TER |
| Aldrin | ND | 100000000000000000000000000000000000000 | | | I |
| a-BHC | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| b-BHC | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| g-BHC (Lindane) | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| d-BHC | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Chlordane | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| 4,4'-DDD | ND | ug/kg | EPA 8081A | 50 | 01/01/2003 06:50 TEH |
| | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| 4,4'-DDE 4,4'-DDT | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Dieldrin | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endosulfan I | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endosulfan II | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endosulfan Sulfate | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endrin | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endrin Aldehyde | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Heptachlor | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Heptachlor Epoxide | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Methoxychlor | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | 01/01/2003 06:50 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | 01/01/2003 06:50 TEH |
| Surrogate Spike | | | | | 1 1 |
| 2,4,5,6-Tetrachlorometaxylene | 00 | 1201 | | | 1.1 |
| Decachlorobiphenyl | 80 | % | EPA 8081A | | 01/01/2003 06:50 TEH |
| Decaciliorophenyi | 110 | % | EPA 8081A | | 01/01/2003 06:50 TEH |
| PCB's as Aroclors by Capillary GC | <0.06 | mg/kg | EPA 8082 | 0.06 | 01/02/2003 14:07 SAK |
| | | | | | 1.1 |
| | | | | | 1.1 |
| Solids (Total) | 85 | % | EPA 160.3 | | 12/23/2002 13:10 JS |
| MARTEL NO. | CLIENT | SAMPLE IDENT | TEICATION | | Sample Date/Time |
| 91290 000002 FSS-6 | | | | | 12/18/2002 09:57 |
| Compound | Test Value | Test Unit | Method | Detection Limit F | Flag Analysis Date/Time/Initial |
| Base/Neutral/Acid Extractables | | | EPA 8270C | · | 12/31/2002 17:04 JKL |
| 9. 5 | | | | | 11 |
| Acenaphthene | ND | ug/kg | EPA 8270C | 500 | 12/31/2002 17:04 JKL |
| Acenaphthylene | ND | ug/kg | EPA 8270C | 500 | 12/31/2002 17:04 JKL |
| Anthracene | ND | ug/kg | EPA 8270C | 500 | 12/31/2002 17:04 JKL |
| Benzo[a]anthracene | ND | ug/kg | EPA 8270C | 500 | 12/31/2002 17:04 JKL |

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| MARTEL NO. 91290 000002 FSS-6 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 09:57 |
|----------------------------------|------------|-------------|------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Benzo[b]fluoranthene | | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Benzo[k]fluoranthene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Benzo[ghi]perylene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Benzo[a]pyrene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Bis-(2-chloroethoxy)methane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Bis-(2-chloroethyl)ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Bis(2-chloroisopropyl)ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4-Bromophenyl phenyl ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Benzyl butyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Carbazole | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4-Chloroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4-Chloro-3-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2-Chloronaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2-Chlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4-Chlorophenyl phenyl ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Chrysene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Dibenz[a,h]anthracene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Dibenzofuran | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Di-n-butyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 1,2-Dichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 1,3-Dichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 1,4-Dichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 3,3'-Dichlorobenzidine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,4-Dichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Diethyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,4-Dimethylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Dimethyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4,6-Dinitro-2-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,4-Dinitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,4-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,6-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Di-n-octyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Bis-(2-ethylhexyl)-phthalate | 1400 | ug/kg | EPA 8270C | 500 | В | 12/31/2002 17:04 JKL |
| Fluoranthene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Fluorene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Hexachlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Hexachlorocyclopentadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Hexachloroethane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Indeno-(1,2,3-cd)-pyrene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Isophorone | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2-Methylnaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 4-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JY' |
| Naphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 |
| | | . 20 820 | | | | |



| MARTEL NO. 91290 (| 000002 | FSS-6 | CLIENT | SAMPLE IDE | NTIFICATION | | | Sample Date/Time 12/18/2002 09:57 |
|-----------------------|---------------|-------|-------------------------|----------------|------------------------|-----------------|------|--------------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 2-Nitroaniline | | , | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JK |
| 3-Nitroaniline | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JK |
| 4-Nitroaniline | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JK |
| Nitrobenzene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| 2-Nitrophenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JK |
| 4-Nitrophenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JK |
| N-Nitrosodiphenyla | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| N-Nitroso-di-N-prop | pylamine | | ND | ug/kg | EPA 8270C | 500 | | |
| Pentachlorophenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| Phenanthrene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| Phenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| Pyrene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| 1,2,4-Trichlorobenz | zene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKI |
| 2,4,5-Trichlorophen | nol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| 2,4,6-Trichlorophen | nol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| N-Nitrosodimethyla | mine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| Hexachlorobutadier | ne | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:04 JKL |
| | | | | ug/kg | LI A 02/00 | 500 | | 12/31/2002 17:04 JKL |
| Surrogate Spike | | | | | | | | 1 1 |
| | | | | | | | | 1 1 |
| 2,4,6-Tribromophen | ol | | 97 | % | EPA 8270C | | | 1 / |
| 2-Fluorobiphenyl | | | 101 | % | EPA 8270C | | | 12/31/2002 17:04 JKL |
| 2-Fluorophenol | | | 110 | % | EPA 8270C | | | 12/31/2002 17:04 JKL |
| Nitrobenzene-d5 | | | 98 | % | EPA 8270C | | | 12/31/2002 17:04 JKL |
| Phenol-d6 | | | 115 | % | EPA 8270C | | | 12/31/2002 17:04 JKL |
| erphenyl-d14 | | | 126 | % | EPA 8270C | | | 12/31/2002 17:04 JKL |
| | | | (1). (1) (1) | 70 | LI A 02/00 | | | 12/31/2002 17:04 JKL |
| Organochlorine Pes | ticides and F | PCB's | | | EPA 8081A | | | 11 |
| | | | | | LFA 000 IA | | | 01/01/2003 08:09 TEH |
| Aldrin | | | ND | ug/kg | EPA 8081A | 10 | | 11 |
| -BHC | | | ND | ug/kg | | 10 | | 01/01/2003 08:09 TEH |
| -BHC | | | ND | ug/kg ug/kg | EPA 8081A EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| -BHC (Lindane) | | | ND | | | 10 | | 01/01/2003 08:09 TEH |
| -BHC | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| hlordane | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ,4'-DDD | | | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 08:09 TEH |
| 4'-DDE | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| 4'-DDT | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ieldrin | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ndosulfan I | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ndosulfan II | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ndosulfan Sulfate | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ndrin | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| ndrin Aldehyde | | | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| | | | | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |

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| MARTEL NO. 91290 000002 FSS-6 | CLIENT | SAMPLE IDE | NTIFICATION | | | Sample Date/Time 12/18/2002 09:57 |
|--|------------|-------------|-------------|-----------------|------|--------------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Heptachlor | ND - | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| Heptachlor Epoxide | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| Methoxychlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:09 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 08:09 TEH |
| | | | | | | / / |
| Surrogate Spike | | | | | | 11 |
| | | | | | | 11 |
| 2,4,5,6-Tetrachlorometaxylene | 79 | % | EPA 8081A | | | 01/01/2003 08:09 TEH |
| Decachlorobiphenyl | 108 | % | EPA 8081A | | | 01/01/2003 08:09 TEH |
| | | | | | | / / |
| PCB's as Aroclors by Capillary GC | <0.06 | mg/kg | EPA 8082 | 0.06 | | 01/02/2003 14:07 SAK |
| | | | | | | / / |
| | | | | | | 11 |
| Solids (Total) | 78 | % | EPA 160.3 | | | 12/23/2002 13:10 JS |
| MARTEL NO. | CLIENT | CAMPLEIDEN | TIE10171011 | | | |
| 91290 000003 FS-3 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 11:40 |
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Base/Neutral/Acid Extractables | | | EPA 8270C | | | 12/31/2002 17:44 JKL |
| A CONTRACTOR OF THE CONTRACTOR | | | | | | 11 |
| Acenaphthene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Acenaphthylene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Anthracene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzo[a]anthracene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzo[b]fluoranthene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzo[k]fluoranthene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzo[ghi]perylene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzo[a]pyrene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Bis-(2-chloroethoxy)methane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Bis-(2-chloroethyl)ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Bis(2-chloroisopropyl)ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Bromophenyl phenyl ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Benzyl butyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Carbazole | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Chloroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Chloro-3-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Chloronaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Chlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Chlorophenyl phenyl ether | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Chrysene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Dibenz[a,h]anthracene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| Dibenzofuran | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 J |



| MARTEL NO. 91290 000003 | FS-3 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 11:40 |
|------------------------------|------|------------|----------------|------------------------|-----------------|------|-----------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Di-n-butyl phthalate | , | ND - | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 1,2-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 1,3-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 1,4-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 3,3'-Dichlorobenzidine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 2,4-Dichlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| Diethyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKI |
| 2,4-Dimethylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Dimethyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4,6-Dinitro-2-methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2,4-Dinitrophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2,4-Dinitrotoluene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2,6-Dinitrotoluene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Di-n-octyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Bis-(2-ethylhexyl)-phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Fluoranthene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Fluorene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Hexachlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Hexachlorocyclopentadiene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Hexachloroethane | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Indeno-(1,2,3-cd)-pyrene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Isophorone | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Methylnaphthalene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Naphthalene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Nitroaniline | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 3-Nitroaniline | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 4-Nitroaniline | | ND | ug/kg | EPA 8270C | 500 | | |
| Nitrobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 2-Nitrophenol | | ND | ug/kg ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| 1-Nitrophenol | | ND | 1.500-00-00-00 | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| N-Nitrosodiphenylamine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| N-Nitroso-di-N-propylamine | | ND | ug/kg | EPA 8270C | | | 12/31/2002 17:44 JKL |
| Pentachlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| Phenanthrene | | ND | ug/kg | EPA 8270C | 500 500 | | 12/31/2002 17:44 JKL |
| Phenol | | ND | ug/kg | EPA 8270C | | | 12/31/2002 17:44 JKL |
| Pyrene | | ND | ug/kg | EPA 8270C EPA 8270C | 500 500 | | 12/31/2002 17:44 JKL |
| 1,2,4-Trichlorobenzene | | ND | ug/kg | EPA 8270C | | | 12/31/2002 17:44 JKL |
| 2,4,5-Trichlorophenol | | ND | ug/kg | | 500 | | 12/31/2002 17:44 JKL |
| 2,4,6-Trichlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| N-Nitrosodimethylamine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| dexachlorobutadiene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |
| ionadillorobutatielle | | NU | ug/kg | EPA 8270C | 500 | | 12/31/2002 17:44 JKL |



| MARTEL NO. 91290 000003 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time |
|-------------------------------------|------------|-------------|-------------|-----------------|------|----------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Surrogate Spike | | | | | - | |
| 2,4,6-Tribromophenol | 100 | % | EPA 8270C | | | 1 |
| 2-Fluorobiphenyl | 96 | % | EPA 8270C | | | 12/31/2002 17:44 JK |
| 2-Fluorophenol | 106 | % | EPA 8270C | | | 12/31/2002 17:44 JK |
| Nitrobenzene-d5 | 95 | % | EPA 8270C | | | 12/31/2002 17:44 JK |
| Phenol-d6 | 107 | % | EPA 8270C | | | 12/31/2002 17:44 JK |
| Terphenyl-d14 | 108 | % | EPA 8270C | | | 12/31/2002 17:44 JKI |
| | 100 | 70 | EPA 02/0C | | | 12/31/2002 17:44 JKI |
| Organochlorine Pesticides and PCB's | | | EPA 8081A | | | 01/01/2003 08:49 TEH |
| | | | | | | 0 1/0 1/2003 08:49 TEF |
| Aldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| a-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| b-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| g-BHC (Lindane) | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| d-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Chlordane | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 08:49 TEH |
| 4,4'-DDD | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| 4,4'-DDE | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| 4,4'-DDT | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Dieldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endosulfan I | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endosulfan II | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endosulfan Sulfate | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endrin | - ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endrin Aldehyde | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Heptachlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Heptachlor Epoxide | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Methoxychlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 08:49 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 08:49 TEH |
| | | -55 | | 00 | | |
| Surrogate Spike | | | | | | 1.1 |
| | | | | | | 1.1 |
| 2,4,5,6-Tetrachlorometaxylene | 67 | % | EPA 8081A | | | 01/01/2003 08:49 TEH |
| Decachlorobiphenyl | 102 | % | EPA 8081A | | | 01/01/2003 08:49 TEH |
| | | | | | | 11 |
| PCB's as Aroclors by Capillary GC | <0.06 | mg/kg | EPA 8082 | 0.06 | | 01/02/2003 14:07 SAK |
| | | | | | | 11 |
| | | | | | | 11 |
| Solids (Total) | 84 | % | EPA 160.3 | | | 12/23/2002 13:10 JS |
| ntimony | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:49 LB |
| rsenic | 5.0 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LP |
| eryllium | 1.3 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 13:49 |



| MARTEL NO 91290 | . 000003 | FS-3 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 11:40 |
|--------------------|--------------------------|------|--------------|-------------|-------------|-----------------|------|-----------------------------------|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Cadmium | - | , | 0.10 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 13:49 L |
| Chromium | | | / 26 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LI |
| Copper | | | /21 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LI |
| Lead | | | -13 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LE |
| Manganese | | | √ 160 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LE |
| Mercury | | | · 0.27 | mg/kg | EPA 7470A | 0.1 | | 12/31/2002 11:25 LE |
| Nickel | | | / 24 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LE |
| Selenium | | | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:49 LE |
| Silver | | | - 0.40 | mg/kg | EPA 6020 | 0.1 | | 01/29/2003 13:49 LE |
| Thallium | | | - 0.22 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:49 LE |
| Zinc | | | , 54 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:49 LE |
| MARTEL NO. | | | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| 91290 | 000004 | FS-7 | 32.2.11 | O, EE 10E14 | THIOATION | | | 12/18/2002 13:00 |
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Base/Neutral/Aci | d Extractables | 3 | | - | EPA 8270C | | | 12/31/2002 18:24 JKL |
| Accepthere | | | N.S. | | | | | 1. |
| Acenaphthene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Acenaphthylene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Anthracene | M1004 | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzo[a]anthrace | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzo[b]fluoranth | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzo[k]fluoranth | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzo[ghi]peryler | ne | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzo[a]pyrene | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Bis-(2-chloroetho | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Bis-(2-chloroethyl | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Bis(2-chloroisopro | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 4-Bromophenyl pl | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Benzyl butyl phtha | alate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Carbazole | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| I-Chloroaniline | Versi bio dell'obsorbito | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| I-Chloro-3-methy | S | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 2-Chloronaphthale | ene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 2-Chlorophenol | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| -Chlorophenyl ph | nenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Chrysene | | | 830 | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Dibenz[a,h]anthra | cene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Dibenzofuran | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| i-n-butyl phthalat | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| ,2-Dichlorobenze | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| ,3-Dichlorobenze | | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| ,4-Dichlorobenze | ne | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |

Martel Laboratories $_{\it JDS}$ Inc.

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| MARTEL NO. 91290 000004 | FS-7 | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:00 |
|--|-------------|-------------|------------|-----------------|------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initia |
| 3,3'-Dichlorobenzidine | ND ND | ug/kg | EPA 8270C | 500 | - | 12/31/2002 18:24 JK |
| 2,4-Dichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Diethyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| 2,4-Dimethylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Dimethyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| 4,6-Dinitro-2-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| 2,4-Dinitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| 2,4-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| 2,6-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Di-n-octyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Bis-(2-ethylhexyl)-phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Fluoranthene | 1400 | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JK |
| Fluorene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Hexachlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Hexachlorocyclopentadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Hexachloroethane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Indeno-(1,2,3-cd)-pyrene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Isophorone | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| 2-Methylnaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| 2-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 4-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| Naphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| 2-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKI |
| 3-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 4-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Nitrobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 2-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 4-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| N-Nitrosodiphenylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| N-Nitroso-di-N-propylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Pentachlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Phenanthrene | V1600 | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Phenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| Pyrene | √ 1700 | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 2,4,5-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| 2,4,6-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| N-Nitrosodimethylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| -dexachlorobutadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 18:24 JKL |
| ************************************** | (J.E.) | aging | | 300 | | |
| Surrogate Spike | | | | | | 1 1 |
| (2) (2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1 | | | | | | 11 |
| 2,4,6-Tribromophenol | 95 | % | EPA 8270C | | | 12/31/2002 18:24 JK |
| 2-Fluorobiphenyl | 98 | % | EPA 8270C | | | 12/31/2002 18:24 J |



| MARTEL NO. 91290 000004 FS- | | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:00 |
|-------------------------------------|---------------|---------------------|------------|-----------------|------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 2-Fluorophenol , | 100 | % | EPA 8270C | | | 12/31/2002 18:24 JKI |
| Nitrobenzene-d5 | 98 | % | EPA 8270C | | | 12/31/2002 18:24 JKL |
| Phenol-d6 | 109 | % | EPA 8270C | | | 12/31/2002 18:24 JKL |
| Terphenyl-d14 | 123 | % | EPA 8270C | | | 12/31/2002 18:24 JKL |
| | | | | | | 1. |
| Organochlorine Pesticides and PCB's | | | EPA 8081A | | | 01/01/2003 09:29 TEH |
| Aldrin | ND | 75707 4 7375 | 504.00044 | 72 | | 1 1 |
| a-BHC | | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| b-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| g-BHC (Lindane) d-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Chlordane | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 09:29 TEH |
| 4,4'-DDD | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| 4,4'-DDE | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| 4,4'-DDT | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Dieldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Endosulfan I | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Endosulfan II | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Endosulfan Sulfate | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Endrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Endrin Aldehyde | ND | ug/kg | EPA 8081A | 10 | 27 | 01/01/2003 09:29 TEH |
| Heptachlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Heptachlor Epoxide | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Methoxychlor | 65 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 09:29 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 09:29 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 09:29 TEH |
| | | | | | | 11 |
| Surrogate Spike | | | | | | 1.1 |
| | | | | | | 1 / |
| 2,4,5,6-Tetrachlorometaxylene | 80 | % | EPA 8081A | | | 01/01/2003 09:29 TEH |
| Decachlorobiphenyl | 97 | % | EPA 8081A | | | 01/01/2003 09:29 TEH |
| | | | | | | 11 |
| PCB's as Aroclors by Capillary GC | <0.07 | mg/kg | EPA 8082 | 0.07 | | 01/02/2003 14:07 SAK |
| | | | | | | 1 / |
| | | | | | | 11 |
| Solids (Total) | 76 | % | EPA 160.3 | | | 12/23/2002 13:10 JS |
| Antimony | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:57 LB |
| Arsenic | ~13 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| Beryllium | J 0.82 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 13:57 LB |
| Cadmium | ∠ 0.96 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 13:57 LB |
| Chromium | / 13 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| Copper | ~ 41 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| ead | × 170 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |

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01/31/2003



| MARTEL NO. 91290 000004 | FS-7 | CLIENT | SAMPLE IDEN | ITIFICATION | -0.46.000 | | Sample Date/Time 12/18/2002 13:00 |
|--------------------------------|------|--------------|-------------|-------------|-----------------|------|--------------------------------------|
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Manganese | | Z80 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| Mercury | | - 0.62 | mg/kg | EPA 7470A | 0.1 | | 12/31/2002 11:25 LB |
| Nickel | | / 9.6 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| Selenium | | - 0.77 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:57 LB |
| Silver | | <0.1 | mg/kg | EPA 6020 | 0.1 | | 01/29/2003 13:57 LB |
| Thallium | | 0.29 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 13:57 LB |
| Zinc | | ~ 250 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 13:57 LB |
| MARTEL NO. 91290 000005 | FS-8 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
| Compound | 10-0 | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Base/Neutral/Acid Extractables | | | | EPA 8270C | | | 12/31/2002 19:04 JKL |
| | | | | | | | / / |
| Acenaphthene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Acenaphthylene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Anthracene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzo[a]anthracene | | ~600 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzo[b]fluoranthene | | -1000 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzo[k]fluoranthene | | ~1100 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzo[ghi]perylene | | 1000 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzo[a]pyrene | | ~1000 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Bis-(2-chloroethoxy)methane | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Bis-(2-chloroethyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Bis(2-chloroisopropyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 4-Bromophenyl phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Benzyl butyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Carbazole | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 4-Chloroaniline | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 4-Chloro-3-methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 2-Chloronaphthalene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 2-Chlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 4-Chlorophenyl phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Chrysene | | -1800 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Dibenz[a,h]anthracene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Dibenzofuran | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Di-n-butyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| ,2-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| ,3-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| ,4-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 3,3'-Dichlorobenzidine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 2,4-Dichlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Diethyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| ,4-Dimethylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 |



| 91290 000005 | FS-8 | O' WIN EL IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
|------------------------------|---------------|----------------|------------------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initia |
| Dimethyl phthalate | , ND — | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| 4,6-Dinitro-2-methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| 2,4-Dinitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| 2,4-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| 2,6-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Di-n-octyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Bis-(2-ethylhexyl)-phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Fluoranthene | ~ 3200 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Fluorene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Hexachlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Hexachlorocyclopentadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Hexachloroethane | ŊD | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Indeno-(1,2,3-cd)-pyrene | 790 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| Isophorone | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JK |
| 2-Methylnaphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 2-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 4-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| Naphthalene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 2-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 3-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 4-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| Nitrobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 2-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKI |
| 1-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| N-Nitrosodiphenylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| N-Nitroso-di-N-propylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Pentachlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Phenanthrene | ~3200 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Phenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Pyrene | ✓ 3400 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| ,2,4-Trichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 2,4,5-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| 2,4,6-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| N-Nitrosodimethylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| dexachlorobutadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:04 JKL |
| Surrogate Spike | | | | | | 1 1 |
| .4,6-Tribromophenol | 106 | % | EPA 8270C | | | 12/21/2002 10:04 1/4 |
| -Fluorobiphenyl | 94 | % | EPA 8270C | | | 12/31/2002 19:04 JKL |
| -Fluorophenol | 106 | % | EPA 8270C | | | 12/31/2002 19:04 JKL |
| litrobenzene-d5 | 97 | | | | | 12/31/2002 19:04 JKL |
| Phenol-d6 | 109 | % | EPA 8270C | | | 12/31/2002 19:04 JKL |
| erphenyl-d14 | 108 | % | EPA 8270C EPA 8270C | | | 12/31/2002 19:04 JKL 12/31/2002 19:04 JKL |

Martel Laboratories $_{\it JDS}$ Inc.



| MARTEL NO. 91290 000005 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
|------------------------------|---------------------------------------|-------------|------------|-----------------|------|----------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| | · · · · · · · · · · · · · · · · · · · | | | | | ${I}$ |
| Organochlorine Pesticides a | and PCB's | | EPA 8081A | | | 01/01/2003 10:09 TEH |
| | | | | | | / / |
| Aldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| a-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| b-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| g-BHC (Lindane) | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| d-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Chlordane | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 10:09 TEH |
| 4,4'-DDD | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| 4,4'-DDE | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| 4,4'-DDT | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Dieldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Endosulfan I | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Endosulfan II | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Endosulfan Sulfate | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Endrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Endrin Aldehyde | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Heptachlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Heptachlor Epoxide | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Methoxychlor | ~74 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:09 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:09 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 10:09 TEH |
| | | | | | | 1 1 |
| Surrogate Spike | | | | | | 1.1 |
| | | | | | | 1.1 |
| 2,4,5,6-Tetrachlorometaxyler | ne 75 | % | EPA 8081A | | | 01/01/2003 10:09 TEH |
| Decachlorobiphenyl | 106 | % | EPA 8081A | | | 01/01/2003 10:09 TEH |
| | | | | | | 11 |
| PCB's as Aroclors by Capilla | ry GC <0.07 | mg/kg | EPA 8082 | 0.07 | | 01/02/2003 14:07 SAK |
| | | | | | | 11 |
| | | | | | | 11 |
| Solids (Total) | 76 | % | EPA 160.3 | | | 12/23/2002 13:10 JS |
| Antimony | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:21 LB |
| Arsenic | -10 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| Beryllium | ₹0.98 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:21 LB |
| Cadmium | 0.59 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:21 LB |
| Chromium | ~20 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| Copper | ∕37 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| ead | _ 126 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| Manganese | ~550 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| Mercury | _0.41 | mg/kg | EPA 7470A | 0.1 | | 12/31/2002 11:25 LB |
| lickel | √ 9.5 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 |
| Selenium | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:21 |

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| MARTEL NO. 91290 000005 | FS-8 | CLIENT | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 13:10 |
|--------------------------------|-------|----------------|-------------|-------------|-----------------|------|-----------------------------------|
| Compound | 1 0-0 | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Silver | | 70.24 | mg/kg | EPA 6020 | 0.1 | | 01/29/2003 14:21 LB |
| Thallium | | <0.2 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:21 LB |
| Zinc | | _220 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:21 LB |
| MARTEL NO. | | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time |
| 91290 000006 | FSS-4 | | | | | | 12/18/2002 11:10 |
| Compound | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| Base/Neutral/Acid Extractables | | | | EPA 8270C | | | 12/31/2002 19:44 JKL |
| Acenaphthene | | 6400 | | | | | 11 |
| Acenaphthylene | | | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Anthracene | | -21000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| | | 31000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Benzo[a]anthracene | | 70000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Benzo[b]fluoranthene | | 41000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Benzo[k]fluoranthene | | -51000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Benzo[ghi]perylene | - | 81000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Benzo[a]pyrene | | _120000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Bis-(2-chloroethoxy)methane | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Bis-(2-chloroethyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Bis(2-chloroisopropyl)ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Bromophenyl phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Benzyl butyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Carbazole | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Chloroaniline | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Chloro-3-methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2-Chloronaphthalene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2-Chlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Chlorophenyl phenyl ether | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Chrysene | | <i>-</i> 78000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Dibenz[a,h]anthracene | ~ | - 8800 | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Dibenzofuran | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Di-n-butyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 1,2-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 1,3-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 1,4-Dichlorobenzene | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 3,3'-Dichlorobenzidine | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2,4-Dichlorophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Diethyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2,4-Dimethylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Dimethyl phthalate | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 1,6-Dinitro-2-methylphenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2,4-Dinitrophenol | | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| | | | | | | | |

Martel Laboratories $_{\it JDS}$ Inc.

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| MARTEL NO. 91290 000006 | CLIENT FSS-4 | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 11:10 |
|---------------------------------|-----------------|-------------|-------------|-----------------|------|-----------------------------------|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| 2,6-Dinitrotoluene | ND | ug/kg | EPA 8270C | 500 | - | 12/31/2002 19:44 JKL |
| Di-n-octyl phthalate | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Bis-(2-ethylhexyl)-phthalate | 1000 | ug/kg | EPA 8270C | 500 | В | 12/31/2002 19:44 JKL |
| Fluoranthene | /105000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Fluorene | √14000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Hexachlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Hexachlorocyclopentadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Hexachloroethane | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Indeno-(1,2,3-cd)-pyrene | 44000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Isophorone | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2-Methylnaphthalene | ✓17000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| 2-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Methylphenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Naphthalene | √52000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| 2-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 3-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Nitroaniline | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Nitrobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 4-Nitrophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| N-Nitrosodiphenylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| N-Nitroso-di-N-propylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Pentachlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Phenanthrene | / 180000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| Phenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Pyrene | 260000 | ug/kg | EPA 8270C | 5000 | | 01/02/2003 9:50 JKL |
| 1,2,4-Trichlorobenzene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2,4,5-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| 2,4,6-Trichlorophenol | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| N-Nitrosodimethylamine | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| Hexachlorobutadiene | ND | ug/kg | EPA 8270C | 500 | | 12/31/2002 19:44 JKL |
| | | | | | | 11 |
| Surrogate Spike | | | | | | 1.1 |
| | | | | | | 11 |
| 2,4,6-Tribromophenol | 91 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| 2-Fluorobiphenyl | 86 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| 2-Fluorophenol | 102 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| Nitrobenzene-d5 | 86 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| Phenol-d6 | 101 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| erphenyl-d14 | 103 | % | EPA 8270C | | | 12/31/2002 19:44 JKL |
| | | | | | | 11 |
| Organochlorine Pesticides and F | PCB's | | EPA 8081A | | | 01/01/2003 10:49 TEH |
| | | | | | | 1. |
| ldrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 T |



| MARTEL NO. 91290 000006 | CLIENT FSS-4 | SAMPLE IDEN | ITIFICATION | | | Sample Date/Time 12/18/2002 11:10 |
|--------------------------------|-----------------|-------------|-------------|-----------------|------|--|
| Compound | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initial |
| a-BHC | , ND | ug/kg | EPA 8081A | | | 01/01/2003 10:49 TEH |
| b-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TE |
| g-BHC (Lindane) | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| d-BHC | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Chlordane | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 10:49 TEH |
| 4,4'-DDD | 67 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| 4,4'-DDE | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| 4,4'-DDT | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Dieldrin | √15 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| Endosulfan I | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Endosulfan II | √ 34 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| Endosulfan Sulfate | ∪ 11 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| Endrin | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Endrin Aldehyde | 17 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| Heptachlor | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Heptachlor Epoxide | , 17 | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Methoxychlor | 1 590 | ug/kg | EPA 8081A | 10 | Р | 01/01/2003 10:49 TEH |
| Endrin Ketone | ND | ug/kg | EPA 8081A | 10 | | 01/01/2003 10:49 TEH |
| Toxaphene | ND | ug/kg | EPA 8081A | 50 | | 01/01/2003 10:49 TEH |
| Surrogate Spike | | | | | | 1 1 |
| 2,4,5,6-Tetrachlorometaxylene | 62 | % | EPA 8081A | | | 04/04/2002 40 40 75/4 |
| Decachlorobiphenyl | 130 | % | EPA 8081A | | Р | 01/01/2003 10:49 TEH 01/01/2003 10:49 TEH |
| 000 | | | | | • | / / |
| PCB's as Aroclors by Capillary | GC <0.06 | mg/kg | EPA 8082 | 0.06 | | 01/02/2003 14:07 SAK |
| | | | | | | / / |
| Solids (Total) | 78 | % | EPA 160.3 | | | 12/23/2002 13:10 JS |
| Antimony | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:25 LB |
| Arsenic | 14 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Beryllium | ./1.2 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:25 LB |
| Cadmium | /0.13 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:25 LB |
| Chromium | 20 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Copper | ²³ | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Lead | × 110 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Manganese | ~1000 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Mercury | <1.1 < | mg/kg | EPA 7470A | 0.1 | | 12/31/2002 11:25 LB |
| Nickel | ₹ 8.8 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Selenium | ✓ 0.60 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:25 LB |
| Silver | ∠ 0.17 | mg/kg | EPA 6020 | 0.1 | | 01/29/2003 14:25 LB |
| Thallium | <0.2 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:25 LB |
| Zinc | √ 73 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:25 LB |



| MARTEL NO 91290 | 000007 | FS-4 | CLIENT | SAMPLE IDEN | TIFICATION | | | Sample Date/Time 12/18/2002 11:04 |
|--|----------|-------|--|--|---|--|------|---|
| Compound | | | Test Value | Test Unit | Method | Detection Limit | Flag | Analysis Date/Time/Initia |
| Solids (Total) | | | 86 | % | EPA 160.3 | | | 12/23/2002 13:10 J |
| Antimony | | | <0.5 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:30 L |
| Arsenic | | | 11 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LI |
| Beryllium | | | <0.05 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:30 L |
| Cadmium | | | ~0.40 | mg/kg | EPA 6020 | 0.05 | | 01/29/2003 14:30 L |
| Chromium | | | - 11 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LI |
| Copper | | | - 39 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LI |
| Lead | | | 190 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LI |
| Manganese | | | 300 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LE |
| Mercury | | , | 1.5 | mg/kg | EPA 7470A | 0.1 | | 12/31/2002 11:25 LE |
| Nickel | | | <0.2 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 LI |
| Selenium | | | 1.9 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:30 L |
| Silver | | | <0.1 | mg/kg | EPA 6020 | 0.1 | | 01/29/2003 14:30 LI |
| Thallium | | | <0.2 | mg/kg | EPA 6020 | 0.2 | | 01/29/2003 14:30 L |
| | | | / 190 | | EDA 6000 | 0.5 | | |
| Zinc | | | / 190 | mg/kg | EPA 6020 | 0.5 | | 01/29/2003 14:30 LE |
| MARTEL NO. | | | | mg/kgSAMPLE IDEN | | | | 01/29/2003 14:30 LE Sample Date/Time |
| | . 000008 | FSS-7 | | | | 0.5 | | |
| MARTEL NO. | | | | | | Detection Limit | Flag | Sample Date/Time |
| MARTEL NO. 91290 Compound Solids (Total) | | | CLIENT | SAMPLE IDEN | TIFICATION | | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial |
| MARTEL NO. 91290 Compound Solids (Total) | | | CLIENT STATES | SAMPLE IDENT | TIFICATION | | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic | | | CLIENT : | SAMPLE IDENT | Method EPA 160.3 | Detection Limit | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE |
| MARTEL NO. 01290 Compound Golids (Total) Antimony Arsenic Beryllium | | | CLIENT STATES | Test Unit mg/kg | Method EPA 160.3 EPA 6020 | Detection Limit | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium | | | CLIENT STATES | Test Unit mg/kg mg/kg | Method EPA 160.3 EPA 6020 EPA 6020 | Detection Limit 0.5 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE 01/29/2003 14:34 LE 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Golids (Total) Antimony Arsenic Beryllium | | FSS-7 | 78 <0.5 10 /1.2 | Test Unit mg/kg mg/kg mg/kg | Method EPA 160.3 EPA 6020 EPA 6020 EPA 6020 | 0.5 0.2 0.05 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE 01/29/2003 14:34 LE 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium | | FSS-7 | CLIENT : Test Value 78 <0.5 10 1.2 0.96 | Test Unit Test Unit mg/kg mg/kg mg/kg mg/kg mg/kg | Method EPA 160.3 EPA 6020 EPA 6020 EPA 6020 EPA 6020 | 0.5 0.2 0.05 0.05 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper | | FSS-7 | CLIENT : Test Value 78 <0.5 10 1.2 -0.96 18 | Test Unit Test Unit mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | Method EPA 160.3 EPA 6020 EPA 6020 EPA 6020 EPA 6020 EPA 6020 EPA 6020 | 0.5 0.2 0.05 0.05 0.05 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Golids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper Lead | | FSS-7 | Test Value 78 <0.5 10 1.2 -0.96 18 65 | Test Unit ——————————————————————————————————— | Method EPA 160.3 EPA 6020 | 0.5 0.2 0.05 0.05 0.05 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 Js 01/29/2003 14:34 LE |
| MARTEL NO. 21290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper ead Manganese | | FSS-7 | 78 <0.5 10 1.2 0.96 18 65 86 | Test Unit " " mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | Method EPA 160.3 EPA 6020 | 0.5 0.2 0.05 0.05 0.05 0.2 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE |
| MARTEL NO. 21290 Compound Colids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper ead Manganese Mercury | | FSS-7 | 78 <0.5 10 1.2 -0.96 18 65 86 1500 | Test Unit Test Unit mg/kg | Method EPA 160.3 EPA 6020 | 0.5 0.2 0.05 0.05 0.05 0.2 0.2 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 J; 01/29/2003 14:34 L; 12/31/2002 11:25 L; |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper Lead Manganese Mercury lickel | | FSS-7 | Test Value 78 <0.5 10 1.2 -0.96 18 65 86 1500 0.71 | Test Unit Test Unit // mg/kg | Method EPA 160.3 EPA 6020 | 0.5 0.2 0.05 0.05 0.2 0.2 0.2 0.2 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE 12/31/2002 11:25 LE 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium Chromium | | FSS-7 | 78 <0.5 10 1.2 0.96 18 65 86 1500 0.71 10 | Test Unit Test Unit mg/kg | EPA 160.3 EPA 6020 | 0.5 0.2 0.05 0.05 0.2 0.2 0.2 0.2 0.2 0.2 | Flag | Sample Date/Time 12/18/2002 13:05 Analysis Date/Time/Initial 12/23/2002 13:10 JS 01/29/2003 14:34 LE |
| MARTEL NO. 91290 Compound Solids (Total) Antimony Arsenic Beryllium Cadmium Chromium Copper Lead Manganese Mercury lickel Selenium | | FSS-7 | CLIENT: Test Value 78 <0.5 10 1.2 0.96 18 65 86 1500 0.71 10 <0.5 | Test Unit Test Unit % mg/kg mg/kg | Method EPA 160.3 EPA 6020 EPA 6020 | 0.5 0.2 0.05 0.05 0.2 0.2 0.2 0.2 0.2 0.1 0.2 0.5 | Flag | Sample Date/Time 12/18/2002 13:05 |





Martel Laboratories _{JDS} Inc.

1025 Cromwell Bridge Road - Battimore, Maryland 21286 PH 410-825-7790 FAX 410-821-1054 EMAIL: martel@martelabs.com MDE

RD083748 Page 19 01/31/2003

All Procedures used are in accordance with the following methods:

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, U.S. EPA Washington D.C., Third Edition, December 1996. Martel is not responsible for sample collection or transportation to the laboratory.

QC Cival(ea)

Project Manager

Vincent Kuyawa

Date_____1/3//63

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| | | | 400 P 10 P 10 P |
|----------------------|-------------------|-------------------|--|
| Lab Name: Marte | Labs, JDS | Contract: MDE | FSS 1 |
| Lab Code: | Case No.: | SAS No.: | DG No.: |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | Service of the servic |
| Sample wt/vol: | 10 (g/ml) G | Lab File ID: | C2123037.D |
| Level: (low/med) ' | LOW | Date Received: | |
| % Moisture:0 | decanted: (Y/N) | N Date Extracted: | 12/26/2002 |
| Concentrated Extra | ct Volume: 1 (uL) | Date Analyzed: | 12/31/2002 |
| Injection Volume: | I.0 (uL) | Dilution Factor: | |
| GPC Cleanup: (Y/N) | NpH: | | |
| Number TICs found: | 3 | CONCENTRATION UNI | |
| CAS NUMBER | COMPOUND NAME | RT ES | T. CONC. Q |
| 1. 002381-21-7 | Pyrene, 1-methyl- | 15.97 | 3800 JN |

2. 000238-84-6

3. 000243-17-4

11H-Benzo[a]fluorene

11H-Benzo[b]fluorene

8500

2300

2400

JN

JN

16.09

16.43

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel | Labs, JDS | Contract: M | DE | FSS | 6 |
|----------------------|---------------------------|-----------------|------------|------------|------|
| Lab Code: | Case No.: | SAS No.: | S | DG No.: | |
| Matrix: (soil/water) | SOIL | Lab S | ample ID: | - | |
| Sample wt/vol: | 10 (g/ml) G | Lab Fi | le ID: | C2123038.D | |
| Level: (low/med) ` | LOW | Date F | Received: | 12/18/2002 | ===8 |
| % Moisture: 0 | decanted: (Y/N) | N Date E | extracted: | 12/26/2002 | |
| Concentrated Extrac | t Volume: 1 (uL) | Date A | nalyzed: | 12/31/2002 | |
| Injection Volume: 1 | .0 (uL) | Dilutio | n Factor: | 1.0 | |
| GPC Cleanup: (Y/N) | NpH: | | | | |
| | | CONCENTRA | TION UNI | TS: | |
| Number TICs found: | 1 | (ug/L or ug/Kg) | UG/I | KG | |
| CAS NUMBER | COMPOUND NAME | R | T ES | T. CONC. | Q |
| 1. 072401-52-6 | 1-Naphthalenepropanol, .a | pha 15 | .95 | 1300 | JN |

1300

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel Labs, JDS | Contract: MDE | FS 3 |
|-------------------------------------|---------------------|------------|
| Lab Code: Case No.: | SAS No.: SD | G No.: |
| Matrix: (soil/water) SOIL | Lab Sample ID: | |
| Sample wt/vol: 10 (g/ml) G | Lab File ID: | C2123039.D |
| Level: (low/med) LOW | Date Received: 1 | 12/18/2002 |
| % Moisture: 0 decanted: (Y/N) | N Date Extracted: 1 | 2/26/2002 |
| Concentrated Extract Volume: 1 (uL) | Date Analyzed: 1 | 2/31/2002 |
| Injection Volume: 1.0 (uL) | Dilution Factor: 1 | .0 |
| GPC Cleanup: (Y/N) N pH: | _ | |
| Number TICs found: 0 | CONCENTRATION UNITS | |
| CAS NUMBER COMPOUND NAME | RT EST | CONC. Q |

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: Martel Labs, JDS | Contract: MDE | FS 7 |
|-------------------------------------|--------------------|------------|
| Lab Code: Case No.: | SAS No.: SE | DG No.: |
| Matrix: (soil/water) SOIL | Lab Sample ID: | 91290 4 |
| Sample wt/vol: 10 (g/ml) G | Lab File ID: | C2123040.D |
| Level: (low/med) LOW | Date Received: | 12/18/2002 |
| % Moisture: 0 decanted: (Y/N) | N Date Extracted: | 12/26/2002 |
| Concentrated Extract Volume: 1 (uL) | Date Analyzed: | 12/31/2002 |
| Injection Volume: 1.0 (uL) | Dilution Factor: | 1.0 |
| GPC Cleanup: (Y/N) N pH: | | |
| Number TICs found:0 | CONCENTRATION UNIT | |
| CAS NUMBER COMPOUND NAME | RT ES | T. CONC. Q |

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| | | | TC 0 |
|----------------------|------------------|---|--------------------------|
| Lab Name: Martel | Labs, JDS | Contract: MDE | FS 8 |
| Lab Code: | Case No.: | SAS No.: | BDG No.: |
| Matrix: (soil/water) | SOIL (5/m) 0 | Lab Sample ID: | mannasa suutamaansa suas |
| Sample wt/vol: | 10 (g/ml) G | Lab File ID: | C2123041.D |
| Level: (low/med) | LOW | Date Received: | 12/18/2002 |
| % Moisture: 0 | decanted: (Y/N) | N Date Extracted: | 12/26/2002 |
| Concentrated Extrac | t Volume: 1 (uL) | Date Analyzed: | 12/31/2002 |
| Injection Volume: 1 | .0 (uL) | Dilution Factor: | 1.0 |
| GPC Cleanup: (Y/N) | NpH: | | |
| Number TICs found: | 4 | CONCENTRATION UN (ug/L or ug/Kg) UG/ | |
| CAS NUMBER | COMPOUND NAME | RT ES | ST. CONC. Q |
| 1. 000486-25-9 | 9H-Fluoren-9-one | 12.74 | 590 JN |

1H-Cyclopropa[I]phenanthrene,1

Phenanthrene, 1-methyl-

9,10-Anthracenedione

2. 000949-41-7

3. 000832-69-9

4. 000084-65-1

2740

650

790

710

JN

JN

JN

13.74

13.79

14.26

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| | | ED COMI COMDS | |
|----------------------|----------------------------|---|---|
| Lab Name: Martel | Labs, JDS | Contract: MDE | FSS 4 |
| Lab Code: | Case No.: | SAS No.: | SDG No.: |
| Matrix: (soil/water) | SOIL | Lab Sample ID: | |
| Sample wt/vol: | 10 (g/ml) G | Lab File ID: | C2123042.D |
| Level: (low/med) | LOW | Date Received: | |
| % Moisture: 0 | decanted: (Y/N) | N Date Extracted: | |
| Concentrated Extrac | t Volume: 1 (uL) | Date Analyzed: | 12/31/2002 |
| Injection Volume: 1 | .0 (uL) | Dilution Factor: | |
| GPC Cleanup: (Y/N) | NpH: | | (All the second |
| Number TICs found: | 5 | CONCENTRATION UN (ug/L or ug/Kg) UG/ | |
| CAS NUMBER | COMPOUND NAME | RT ES | ST. CONC. Q |
| 1. 025013-15-4 | Benzene, ethenylmethyl- | 7.02 | 9500 JN |
| 2. 000581-40-8 | Naphthalene, 2,3-dimethyl- | 10.66 | 8200 JN |

3. 000112-95-8

4. 000198-55-0

000214-17-5

Eicosane

Perylene

Benzo[b]chrysene

52,700

11000

15000

9000

JN

JN

JN

11.51

21.16

24.96

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

| Lab Name: | Martel | Labs, JDS | | Contrac | ct: N | 1DE | BLK | _s |
|---|---------------|-----------|-----------------|-------------------|-----------------------|------------|--|----|
| Lab Code: | | | Case No.: | SAS | No.: | S | DG No.: | |
| Matrix: (soil/v Sample wt/vo Level: (low/n % Moisture: Concentrated | ol: ned) 0 | | (g/ml) G | N | Lab F Date Date | Extracted: | C2123035.D 12/18/2002 12/26/2002 | |
| Injection Volu | me: <u>1.</u> | 0 (uL) | 1 (uL) _ pH: | | | on Factor: | 1.0 | |
| Number TICs | found: | 0 | | CONCE (ug/L or | | TION UNI | | |
| CAS NUMB | ER | COMPO | OUND NAME | | F | RT ES | ST. CONC. | Q |

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| Lab Name: | Martel L | abs, JDS | | C | ontract: | MDE | DLN_5 |
|----------------|---------------|----------|-----------------|---|----------|---------------|------------|
| Lab Code: | | C | ase No.: | | SAS No | .: S | DG No.: |
| Matrix: (soil/ | water) | SOIL | | | Lab | Sample ID: | Blank |
| Sample wt/v | ol: | 10 | (g/ml) G | | Lab | File ID: | C2123035.D |
| Level: (low/r | med) | LOW | _ | | Dat | e Received: | 12/18/2002 |
| % Moisture: | 0 | de | ecanted:(Y/N) _ | Ν | _ Dat | e Extracted: | 12/26/2002 |
| Concentrated | d Extract | Volume: | 1 (uL) | | Dat | e Analyzed: | 12/31/2002 |
| Injection Vol | ume: <u>1</u> | .0 (uL) | | | Dilu | ution Factor: | 1.0 |
| GPC Cleanu | p: (Y/N) | Ν | pH: | | | | |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND (ug/L or ug/K | g) UG/KG | Q |
|-----------|-----------------------------|----------|---|
| 3855-82-1 | N-Nitrosodimethylamine | 500 | U |
| 111-44-4 | bis(2-Chloroethyl)ether | 500 | U |
| 108-95-2 | Phenol | 500 | U |
| 95-57-8 | 2-Chlorophenol | 500 | U |
| 541-73-1 | 1,3-Dichlorobenzene | 500 | U |
| 106-46-7 | 1,4-Dichlorobenzene | 500 | U |
| 95-50-1 | 1,2-Dichlorobenzene | 500 | U |
| 95-50-1 | Benzyl alcohol | 500 | U |
| 108-60-1 | bis(2-chloroisopropyl)ether | 500 | U |
| 67-72-1 | 2-Methylphenol | 500 | U |
| 67-72-1 | Hexachloroethane | 500 | U |
| 621-64-7 | N-Nitroso-di-n-propylamine | 500 | U |
| 67-72-1 | 4-Methylphenol | 500 | U |
| 98-95-3 | Nitrobenzene | 500 | U |
| 78-59-1 | Isophorone | 500 | U |
| 88-75-5 | 2-Nitrophenol | 500 | U |
| 105-67-9 | 2,4-Dimethylphenol | 500 | Ū |
| 111-91-1 | bis(2-Chloroethoxy)methane | 500 | U |
| 120-83-2 | 2,4-Dichlorophenol | 500 | U |
| 120-82-1 | 1,2,4-Trichlorobenzene | 500 | Ū |
| 91-20-3 | Naphthalene | 500 | U |
| | 4-Chloroaniline | 500 | U |
| 87-68-3 | Hexachlorobutadiene | 500 | U |
| 59-50-7 | 4-Chloro-3-methylphenol | 500 | U |
| | 2-Methylnaphthalene | 500 | U |
| 77-47-4 | Hexachlorocyclopentadiene | 500 | Ū |
| 88-06-2 | 2,4,6-Trichlorophenol | 500 | U |
| 67-72-1 | 2,4,5-Trichlorophenol | 500 | U |
| 91-58-7 | 2-Chloronaphthalene | 500 | U |
| 88-06-2 | 2-Nitroaniline | 500 | U |
| 208-96-8 | Acenaphthylene | 500 | U |
| 131-11-3 | Dimethylphthalate | 500 | U |
| 606-20-2 | 2,6-Dinitrotoluene | 500 | U |
| | 3-Nitroaniline | 500 | U |
| 83-32-9 | Acenaphthene | 500 | U |
| 51-28-5 | 2,4-Dinitrophenol | 500 | U |
| 132-64-9 | Dibenzofuran | 500 | U |

FORM I SV-1

3/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| Lab Name: | Martel L | abs, JD | S | (| Contract: N | 1DE | BLK_s |
|----------------|-----------|---------|-----------------|---|-------------|------------|-----------------------------|
| Lab Code: | | | Case No.: | | SAS No.: | S | DG No.: |
| Matrix: (soil/ | water) | SOIL | | | Lab S | Sample ID: | Service and the reservoirs. |
| Sample wt/v | ol: | 10 | (g/ml) G | | | ile ID: | C2123035.D |
| Level: (low/r | med) | LOW | | | Date | Received: | 12/18/2002 |
| % Moisture: | 0 | | decanted:(Y/N) | Ν | Date | Extracted: | 12/26/2002 |
| Concentrated | d Extract | Volume | : <u>1</u> (uL) | | Date / | Analyzed: | 12/31/2002 |
| Injection Vol | ume: 1 | .0 (uL |) | | Dilutio | on Factor: | 1.0 |
| GPC Cleanu | p: (Y/N) | N | pH: | 3 | | | |

CONCENTRATION UNITS:

| CAS NO. | COMPOUND (ug/L or ug/K | g) UG/KG | Q |
|-----------|----------------------------|----------|---|
| 121-14-2 | 2,4-Dinitrotoluene | 500 | U |
| 100-02-7 | 4-Nitrophenol | 500 | U |
| 86-73-7 | Fluorene | 500 | U |
| 7005-72-3 | 4-Chlorophenyl-phenylether | 500 | Ū |
| 84-66-2 | Diethylphthalate | 500 | U |
| | 4-Nitroaniline | 500 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphenol | 500 | U |
| 86-30-6 | n-Nitrosodiphenylamine | 500 | U |
| 101-55-3 | 4-Bromophenyl-phenylether | 500 | U |
| 118-74-1 | Hexachlorobenzene | 500 | U |
| 87-86-5 | Pentachlorophenol | 500 | U |
| 85-01-8 | Phenanthrene | 500 | Ü |
| 120-12-7 | Anthracene | 500 | Ü |
| | Carbazole | 500 | Ū |
| 84-74-2 | Di-n-butylphthalate | 500 | Ū |
| 206-44-0 | Fluoranthene | 500 | U |
| 129-00-0 | Pyrene | 500 | U |
| 3855-82-1 | Benzidine | 500 | U |
| 85-68-7 | Butylbenzylphthalate | 500 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | 500 | U |
| 56-55-3 | Benzo[a]anthracene | 500 | U |
| 218-01-9 | Chrysene | 500 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthalate | 500 | Ū |
| 117-84-0 | Di-n-octylphthalate | 500 | U |
| 205-99-2 | Benzo[b]fluoranthene | 500 | U |
| 207-08-9 | Benzo[k]fluoranthene | 500 | U |
| 50-32-8 | Benzo[a]pyrene | 500 | U |
| 193-39-5 | Indeno[1,2,3-cd]pyrene | 500 | U |
| 53-70-3 | Dibenz[a,h]anthracene | 500 | U |
| 191-24-2 | Benzo[g,h,i]perylene | 500 | U |

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| Lab Name: | Martel Labs, JDS | Contract: | MDE | LCS | |
|-----------|------------------|-----------|--------------|-----|--|
| ah Code | Coss No. | | 1 (0) (0.25) | | |

| Lab Code: | c | ase No.: | | SAS No.: S | DG No.: |
|----------------------|-----------|---------------|---|------------------|------------|
| Matrix: (soil/water) | SOIL | | | Lab Sample ID: | LCS |
| Sample wt/vol: | 10 | (g/ml) G | | Lab File ID: | C2123036.D |
| Level: (low/med) | LOW | _ | | Date Received: | 12/18/2002 |
| % Moisture: 0 | de | ecanted:(Y/N) | N | Date Extracted: | 12/26/2002 |
| Concentrated Extrac | t Volume: | 1 (uL) | | Date Analyzed: | 12/31/2002 |
| Injection Volume: | 10 (11) | | | Dilution Factor: | 1.0 |

GPC Cleanup: (Y/N) N pH:

CONCENTRATION UNITS:

| CAS NO. | COMPOUND | (ug/L or ug/Kg) | UG/KG | Q |
|-----------|-------------------------|-----------------|-------|---|
| 3855-82-1 | N-Nitrosodimethylami | ne | 500 | U |
| 111-44-4 | bis(2-Chloroethyl)ethe | | 500 | Ū |
| 108-95-2 | Phenol | | 12000 | E |
| 95-57-8 | 2-Chlorophenol | | 11000 | E |
| 541-73-1 | 1,3-Dichlorobenzene | | 500 | Ū |
| 106-46-7 | 1,4-Dichlorobenzene | | 4600 | E |
| 95-50-1 | 1,2-Dichlorobenzene | | 500 | Ū |
| 95-50-1 | Benzyl alcohol | | 500 | U |
| 108-60-1 | bis(2-chloroisopropyl)e | ether | 500 | Ü |
| 67-72-1 | 2-Methylphenol | | 500 | U |
| 67-72-1 | Hexachloroethane | | 500 | U |
| 621-64-7 | N-Nitroso-di-n-propyla | mine | 5600 | E |
| 67-72-1 | 4-Methylphenol | 1/3 | 500 | U |
| 98-95-3 | Nitrobenzene | | 44 | J |
| 78-59-1 | Isophorone | | 500 | U |
| 88-75-5 | 2-Nitrophenol | | 500 | U |
| 105-67-9 | 2,4-Dimethylphenol | | 500 | U |
| 111-91-1 | bis(2-Chloroethoxy)me | ethane | 500 | U |
| 120-83-2 | 2,4-Dichlorophenol | Arrano | 94 | J |
| 120-82-1 | 1,2,4-Trichlorobenzene | 9 | 4700 | E |
| 91-20-3 | Naphthalene | | 500 | U |
| | 4-Chloroaniline | | 500 | U |
| 87-68-3 | Hexachlorobutadiene | | 500 | U |
| 59-50-7 | 4-Chloro-3-methylpher | nol | 12000 | E |
| | 2-Methylnaphthalene | | 500 | U |
| 77-47-4 | Hexachlorocyclopentae | diene | 500 | U |
| 88-06-2 | 2,4,6-Trichlorophenol | | 500 | U |
| 67-72-1 | 2,4,5-Trichlorophenol | | 500 | U |
| 91-58-7 | 2-Chloronaphthalene | | 500 | U |
| 88-06-2 | 2-Nitroaniline | | 500 | U |
| 208-96-8 | Acenaphthylene | | 500 | U |
| 131-11-3 | Dimethylphthalate | | 500 | U |
| 606-20-2 | 2,6-Dinitrotoluene | | 500 | U |
| | 3-Nitroaniline | | 500 | U |
| 83-32-9 | Acenaphthene | | 5100 | E |
| 51-28-5 | 2,4-Dinitrophenol | | 500 | U |
| 132-64-9 | Dibenzofuran | | 500 | U |

FORM I SV-1 3/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

| Lab Name: Ma | artel L | _abs, JDS | . | 3 | Contract: MDE | LCS |
|-------------------|-------------|-----------|-----------------|---|------------------|--------------|
| Lab Code: | | (| Case No.: | | SAS No.: | SDG No.: |
| Matrix: (soil/wat | er) | SOIL | | | Lab Sample ID | : LCS |
| Sample wt/vol: | | 10 | (g/ml) <u>G</u> | | Lab File ID: | C2123036.D |
| Level: (low/med | i) | LOW | | | Date Received | : 12/18/2002 |
| % Moisture: | 0 | d | lecanted:(Y/N) | N | Date Extracted | : 12/26/2002 |
| Concentrated Ex | xtract | Volume: | 1 (uL) | | Date Analyzed | : 12/31/2002 |
| Injection Volume | e: <u>1</u> | .0 (uL) | | | Dilution Factor: | : 1.0 |
| GPC Cleanup: (| Y/N) | N | pH: | | | |
| | | | | | CONCENTRATION | N UNITS: |

| | | CONCENTRATI | ON UNITS: | |
|-----------|--------------------------|-----------------|-----------|---|
| CAS NO. | COMPOUND | (ug/L or ug/Kg) | UG/KG | Q |
| 121-14-2 | 2,4-Dinitrotoluene | | 4600 | Е |
| 100-02-7 | 4-Nitrophenol | | 11000 | E |
| 86-73-7 | Fluorene | | 500 | Ū |
| 7005-72-3 | 4-Chlorophenyl-phenyl | ether | 500 | U |
| 84-66-2 | Diethylphthalate | | 500 | U |
| | 4-Nitroaniline | | 500 | U |
| 534-52-1 | 4,6-Dinitro-2-methylphe | enol | 500 | U |
| 86-30-6 | n-Nitrosodiphenylamine | 9 | 500 | Ū |
| 101-55-3 | 4-Bromophenyl-phenyle | | 500 | Ū |
| 118-74-1 | Hexachlorobenzene | | 500 | U |
| 87-86-5 | Pentachlorophenol | | 11000 | E |
| 85-01-8 | Phenanthrene | | 500 | Ū |
| 120-12-7 | Anthracene | | 500 | U |
| | Carbazole | | 500 | U |
| 84-74-2 | Di-n-butylphthalate | | 45 | J |
| 206-44-0 | Fluoranthene | | 500 | U |
| 129-00-0 | Pyrene | | 5500 | E |
| 3855-82-1 | Benzidine | | 500 | U |
| 85-68-7 | Butylbenzylphthalate | | 500 | U |
| 91-94-1 | 3,3'-Dichlorobenzidine | | 500 | U |
| 56-55-3 | Benzo[a]anthracene | | 500 | U |
| 218-01-9 | Chrysene | | 500 | U |
| 117-81-7 | bis(2-Ethylhexyl)phthala | ate | 62 | J |
| 117-84-0 | Di-n-octylphthalate | | 500 | Ū |
| 205-99-2 | Benzo[b]fluoranthene | | 500 | Ū |
| 207-08-9 | Benzo[k]fluoranthene | | 500 | U |
| 50-32-8 | Benzo[a]pyrene | | 500 | U |
| 193-39-5 | Indeno[1,2,3-cd]pyrene | | 500 | U |
| 53-70-3 | Dibenz[a,h]anthracene | | 500 | U |
| 191-24-2 | Benzo[g,h,i]perylene | | 500 | U |

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

| Lab Name: | Martel Labs, JDS | Contract: MDE | | |
|--------------|--------------------------|---------------|-------------------|--|
| Lab Code: | Case No.: | SAS No.: | SDG No.: | |
| Matrix Spike | e - EPA Sample No. FSS 4 | Leve | el: (low/med) LOW | |

| COMPOUND | SPIKE ADDED (ug/Kg) | SAMPLE CONCENTRATION (ug/Kg) | MS CONCENTRATION (ug/Kg) | MS % REC# | QC LIMITS REC. |
|----------------------------|---------------------------|------------------------------------|--------------------------------|-----------------|----------------------|
| Phenol | 10000 | 0.0 | 12000 | 120 | 26 - 121 |
| 2-Chlorophenol | 10000 | 0.0 | 11000 | 110 | 25 - 112 |
| 1,4-Dichlorobenzene | 5000 | 0.0 | 4400 | 88 | 21 - 104 |
| N-Nitroso-di-n-propylamine | 5000 | 0.0 | 5600 | 112 | 30 - 126 |
| 1,2,4-Trichlorobenzene | 5000 | 0.0 | 4600 | 92 | 24 - 126 |
| 4-Chloro-3-methylphenol | 10000 | 0.0 | 12000 | 120 | 26 - 121 |
| Acenaphthene | 5000 | 5000 | 5300 | 5 | 5 - 90 |
| 2,4-Dinitrotoluene | 5000 | 0.0 | 3500 | 70 | 20 - 89 |
| 4-Nitrophenol | 10000 | 0.0 | 11000 | 110 | 11 - 114 |
| Pentachlorophenol | 10000 | 0.0 | 9400 | 94 | 12 - 109 |
| Pyrene | 5000 | 500000 | 98000 | 0 * | 14 - 142 |

| | SPIKE ADDED | MSD CONCENTRATION | MSD % | % | QCI | LIMITS |
|----------------------------|----------------|----------------------|----------|------|-----|----------|
| COMPOUND | (ug/Kg) | (ug/Kg) | REC# | RPD# | RPD | REC. |
| Phenol | 10000 | 11000 | 110 | 9 | 35 | 26 - 121 |
| 2-Chlorophenol | 10000 | 9700 | 97 | 13 | 50 | 25 - 112 |
| 1,4-Dichlorobenzene | 5000 | 3900 | 78 | 12 | 27 | 21 - 104 |
| N-Nitroso-di-n-propylamine | 5000 | 5100 | 102 | 9 | 38 | 30 - 126 |
| 1,2,4-Trichlorobenzene | 5000 | 4200 | 84 | 9 | 38 | 24 - 126 |
| 4-Chloro-3-methylphenol | 10000 | 11000 | 110 | 9 | 33 | 26 - 121 |
| Acenaphthene | 5000 | 5500 | 10 | 50 | 50 | 5 - 90 |
| 2,4-Dinitrotoluene | 5000 | 3100 | 62 | 12 | 47 | 20 - 89 |
| 4-Nitrophenol | 10000 | 10000 | 100 | 10 | 50 | 11 - 114 |
| Pentachlorophenol | 10000 | 8900 | 89 | 5 | 47 | 12 - 109 |
| Pyrene | 5000 | 53000 | 0 * | 0 | 36 | 14 - 142 |

| # Column to b | e used to fl | ag recovery and | RPD values | with an asterisk |
|---------------|--------------|-----------------|------------|------------------|
|---------------|--------------|-----------------|------------|------------------|

| * | Va | lues | outside | of | QC | limits | |
|---|----|------|---------|----|----|--------|--|
| | | | | | | | |

RPD: 0 out of 11 outside limits

Spike Recovery: 2 out of 22 outside limits

| COMMENTS: | |
|-----------|--|
| | |
| | |

| MARTE | EL CHAIN OF CUSTOD | Y/SAM | MARTEL CHAIN OF CUSTODY / SAMPLE INFORMATION FORM |
|--|--|-----------------------------|--|
| MARTEL Log # 01290 | Clinaton MANA | ad • Baltimore, | (1) (1) Cliest Code (10.0) (|
| | ollent code | Sa | Sampler A. Caring / S. Morgan |
| Client Name/Phone/FAX MDE 4 | 410 537-3493 / -3472 | Pr | Project Name# Frederick Site T |
| Client Address 1800 Washington Blud, Swite | ter Blud, Suite 625 | ပိ | Contract/P.O Number |
| Invoice Address | , | Sa | Sample Turnaround Time 51.01 |
| Station No / Sample ID Station Location | Container Description/ Matrix Preservation Status | Potentially # of Hazardous? | Date of the contract of the co |
| F55-1 | 50.1 2-802. | _ | 12/18/92 12ac 51/2/ |
| ² FSS-6 | 5.1 2-802 | No | 967 51/1/6 9-11 |
| 3 FS-3 | 5.1 2-802, 1-40g | NG | 1140 |
| 1 F5-7 | | 2 2 | 1200 |
| 12° | | 9 | There's SVCCs, Pert / CB |
| 8-5-8 | 501/ 2-802 | N° | 12/18/4 1310 12 1 1 2 1 1 2 1 1 2 1 |
| 6 K54 | 2.1 2-80z | No | 12/18/07 1110 Malls SILL SILLS |
| 1 FS-4 | S.1 1-402 | X | 12/14/2 16.4 PO (1. |
| 8 FSS-7 | | 200 | _ |
| H-55-H | | | (htali) (2) 5/0/5/ |
| | | | |
| | | | |
| - | | | |
| I ransieroo ox | Me | Date Time /240 | Cooler Receipt Information (LAB USE ONLY) Sufficient ice? - VesiNo If No temp = |
| Iransferred by: | Received by: Da | Date Time | - 7b |
| Transferred by: | Received by: | Date Time | Initials: 13700 Date: |
| | | | mindals. Oct Date: 12-20-01. |

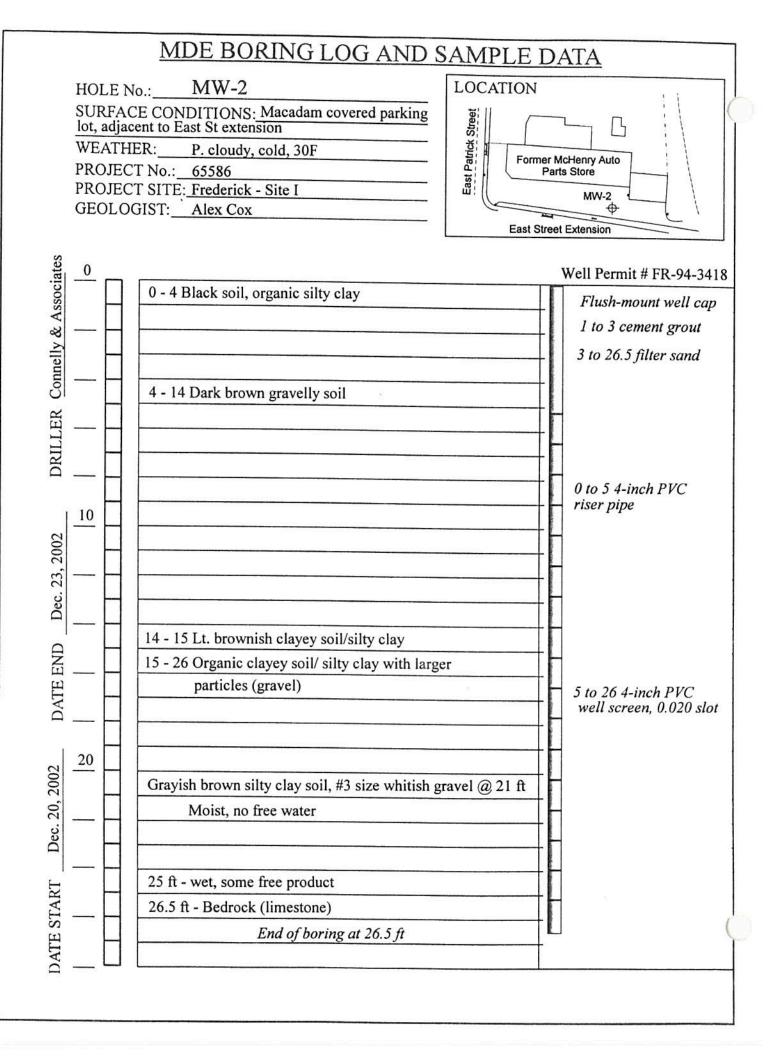
ATTACHMENT B Boring Logs and Well Completion Diagrams

ATTACHMENT A

northingenory the colour binary agend somewall

DESCRIPTION OF THE

| | MDE BORING LOG AND S | SAMPLE D | ATA |
|---|--|-----------------|---|
| lot, at co WEATH PROJEC PROJEC | MW-1 CE CONDITIONS: Macadam covered parking mer of East St extension and East Patrick St ER: P. cloudy, cold, 30F CT No.: 65586 CT SITE: Frederick - Site I GIST: Alex Cox | ₩W-1 | McHenry Auto rts Store |
| Sociates 0 | Macadam, concrete | | Well Permit # FR-94-3419 |
| Connelly & Associates | 2 ft - Mixed orange, yellow, tan fill | | Flush-mount well cap 1 to 3 ft - cement grout |
| | 4 - 8 Moist rust colored clayey silt grading to ol 6 ft - Strong petroleum odor | live brown | 3 to 26 ft - filter sand |
| DRILLER | 8 - 12 ft Yellow turning brown silty clay with n | nixed gravels | - 0 to 3 ft - 4-inch PVC riser pipe |
| 7002 | | | , ise. pipe |
| Dec. 21, 2002 | 12 - 18 ft - Orange brown silty clay, moist. | | |
| DATE END | | | 3 to 26 4-inch PVC well |
| 20 | 17 ft - Layer of free product 18 - 20 ft - Limestone rock boulder or layer | | screen, 0.020 slot |
| Dec. 19, 2002 | 20 - 30 ft - Wet, debris with free product. Use of hammer and copious amounts of free discharged with air stream makes lo | e product | |
| 1 | and an accam makes to | eging difficult | |
| DATE START | | | |
| _ | End of boring at 30 ft | | |



| | MDE BORING LOG AND SAMPLE DATA |
|---|--|
| PROJE PROJE | No.: FS-1 CE CONDITIONS: Grassy area Next to tence HER: Cloudy, Cold, 30F CT No.: 65586 CT SITE: Frederick - Site T |
| DRILLER Columbia Tech. | Grass, top soil Fill |
| DATE START 1150, (2/18/02 DATE END (2/18/02 /2/0 D) | 4-5 Dark green grey silty Strong petroleum Clay and fine Sand. Odor End of boring 05' |
| | |

| MDE BORING LOG AND SAMPLE | DATA |
|---|--|
| HOLE No.: | in the second se |
| Light red brown Sitty clay, Fine Sand, gravel, fill. | |
| Silty clay, turning dark grey | |
| End bosing @ 5' | Slight petroleum |
| DATE START 12/18/02, | |

| | | | | $\underline{\mathbf{N}}$ | (DE | BO | RIN | 1G L | <u>OG</u> | AN | D S | AMP | LE I | DATA | |
|---|--------------------------|---------------------|---------------------------|--------------------------|------|--------------------------|------------------|------|-----------|------|----------|-------|------|---|--|
| | | WEA PROJ PROJ | FAC DAC THE TECT | ER:_C No.: | NDIT | FOIONS of of 55 | 5-3 :Ma Co | cada | sm 30F | | | LOCAT | | \$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | |
| | DRILLER Columbia Tech | 0 | | \(\sqrt{1} \) | /o / | <u>'•</u> 9. | | | | | | | | Mote: No log kept. No odors or unusual Materials encountered. | |
| | DATE END 12/18/02 1/45 | 3 4 5 | | | | | 20/2 | | | | <i>O</i> | E/ | | | |
|) | DATE START 12/18/02 1/30 | | | | | _ <i>B</i> | | g Co | | lefe | 0 | 5' | | | |

| MDE BORING LOG AND SA | MPLE DATA |
|--|------------------------|
| HOLE No.: $FS-4$ | OCATION |
| SURFACE CONDITIONS: Parking lot near East Street and MW-2 | East Street |
| WEATHER: Cloudy cold, 30F PROJECT No.: 65586 | \$ FS-4 ≈ 60' → € |
| PROJECT SITE: Frederick. Site I | A FS |
| GEOLOGIST: A. Zarins | Bldg |
| 40 | |
| Macadam, gravel | |
| Bright annual Constant | ((),(1) |
| Brick, gravel, macadam, | (+,11) |
| 1 Drick layer (old road?) | |
| 2 Gravel book wood (A:11) | |
| # 2 Gravel, brick, wood (fill |) |
| 0 _ | |
| 2 20 | |
| 3 3 5 5 5 5 5 5 5 5 | |
| 12/18 | |
| 8 4 | |
| DATE END | |
| Dark brown Silty Clay | D.1. / |
| S 5 a | Petroloum odor 4-5' |
| End of boring @ 5' | |
| 18/02 | |
| 72 | |
| TART _ | |
| DATE START 12/18/02 1050 End of pocing © 2, | |
| ⁷ _ ⊔ ∟ | |
| | |

| | MDE BORING LOG AND S | AMPLE DATA | |
|--------------------------------------|---|--|-------------------|
| SURFA PA WEATH PROJECT PROJECT GEOLO | No.:FS-5 CE CONDITIONS: Macadam Ic King lot HER:Cloudy , Cold, 32 CT No.:65586 CT SITE: _Frederick-Site I OGIST:A. Zarins | LOCATION East Street FS-4 FS-4 II' | East Satrick S |
| Tech | Macadam, gravel Brown Silty Clay, some fin trace rounded gravel, brick, (fill) | e sand, moist | |
| DATE START 12/18/02 (015 DATE END 12 | End of boring @ 5' | | |

| MDE BORING LOG AND SAMPLE DATA | | | | | | | | |
|--|---------------------------|--|--|--|--|--|--|--|
| HOLE No.: FS-6 | LOCATION East Patrick St. | | | | | | | |
| SURFACE CONDITIONS: Macadam | FS-6 | | | | | | | |
| Parking lot WEATHER: Cloudy, Cold, 30 F PROJECT No.: Frederick, Site T PROJECT SITE: 65586 | * | | | | | | | |
| PROJECT No.: Frederick, Site T PROJECT SITE: 65586 | FS-5 Brick wall | | | | | | | |
| GEOLOGIST: A. Zarins | Drick Wall | | | | | | | |
| ~ | | | | | | | | |
| | | | | | | | | |
| Macadam, gravel | | | | | | | | |
| e Brown Silty Clay, some fine Sand | trace | | | | | | | |
| en Brown Silty Clay, some fine Sand, Founded gravel, Moist (fil | 11) | | | | | | | |
| | | | | | | | | |
| 2 DRILLER | | | | | | | | |
| 2 2 | | | | | | | | |
| , H | | | | | | | | |
| | | | | | | | | |
| 1 3 1 1 1 | | | | | | | | |
| 12/18/02 | | | | | | | | |
| | | | | | | | | |
| DATE END | | | | | | | | |
| ATE | 4-5' Petroleum | | | | | | | |
| | odor | | | | | | | |
| 25 | | | | | | | | |
| 25 | | | | | | | | |
| | | | | | | | | |
| 6 | | | | | | | | |
| End of boring @ 6' | | | | | | | | |
| STA — H | | | | | | | | |
| DATE START 12/18/02 Evg of pocios 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| MDE BORING LOG AND SAMPLE DATA | |
|---|--|
| HOLE No.: FS-7 SURFACE CONDITIONS: Macadam Parking lot WEATHER: Cloudy, Cold. PROJECT No.: 65586 PROJECT SITE: Frederick, Site I GEOLOGIST: A. Zarins | |
| Note: Log not recorded. No edurs or unusu material. 2 | |



ATTACHMENT C Toxicological Analysis



Maryland Department of the Environment Waste Management Administration Environment Program

MEMORANDUM

TO: Scott Morgan, Project Manager Site Assessment/Brownfields

THROUGH: Patti Davis, Section Head

Site Assessment/Brown

FROM: Nicole Allen, Toxicologist

Environmental Restoration and Redevelopment Program

THROUGH: Mark A. Mank, Toxicologist

Environmental Restoration and Redevelopment Program

SUBJECT: Toxicological Evaluation - Parcel I, Frederick, Maryland

DATE: February 28, 2003

The toxicological evaluation for the Frederick Parcel I property located in Frederick, Frederick County, Maryland is attached. The toxicological evaluation assumed the future use of the site to be commercial.

MDE and EPA recommended levels for all commercial populations. Risk estimates for dermal exposure to detected carcinogenic and noncarcinogenic surface soil contaminants were within recommended by EPA and MDE for all commercial populations. Risk estimates for dermal volatiles and fugitive dust from surface and subsurface soils were within acceptable levels as noncarcinogenic and carcinogenic risk levels from the inhalation of detected and nondetected The estimated recommended levels for the construction worker commercial population. incidental ingestion of detected carcinogenic subsurface soil contaminants were within EPA visitor, youth visitor and adult worker commercial populations. Risks associated with the risk ranges for all commercial populations and EPA recommended risk ranges for the child ingestion of detected carcinogenic subsurface soil contaminants exceeded MDE recommended recommended risk ranges for all commercial populations. Risk estimates for the incidental the youth visitor, adult worker and construction worker commercial populations and EPA ingestion of detected surface soil contaminants were within MDE recommended risk ranges for ranges for the child visitor commercial population. Carcinogenic risk estimates for incidental ingestion of detected carcinogenic surface soil contaminants exceeded MDE recommended risk recommended risk levels for all commercial populations. Risks associated with the incidental soil contaminants, under a commercial future use scenario, were within MDE and EPA Noncarcinogenic risks estimated for the incidental ingestion of detected surface and subsurface



exposure to detected noncarcinogenic subsurface soil contaminants were within MDE and EPA recommended levels for all commercial populations. Carcinogenic risk estimates for dermal exposure to detected subsurface soil contaminants exceeded MDE recommended risk ranges for the child visitor and adult worker commercial populations. Dermal contact ranges for the child visitor and adult worker commercial populations. Dermal contact carcinogenic risk estimates from exposure to detected subsurface soil contaminants were within MDE recommended risk ranges for the construction worker commercial population and EPA recommended levels for the youth visitor and construction worker commercial populations. The maximum concentrations of lead were below the 400 mg/kg residential soil screening value in both surface and subsurface soil. Based upon the available data, and a projected commercial future land use, no further evaluation of lead contamination in soils on site is warranted.

The estimated noncarcinogenic and carcinogenic risks from ingestion of detected groundwater exceeded MDE and EPA recommended levels for all commercial populations. Noncarcinogenic risk estimates from dermal contact with detected groundwater contaminants exceeded MDE recommended risk ranges for all commercial populations. Carcinogenic risk estimates from tanges for all commercial populations. Carcinogenic risk ranges for the adult worker and youth visitor commercial populations. Carcinogenic risks from dermal contact with detected contaminants in groundwater were within EPA recommended risk ranges for the child visitor and contaminants in groundwater were within EPA recommended risk ranges for the child visitor and contaminants in groundwater were within EPA recommended risk ranges for the child visitor and the protection worker commercial populations. Three detected contaminants, benzene, ethylbenzene and toluene, exceeded their respective MCLs. Benzene exceeded the AWQC for the protection of aquatic life (acute or chronic) and protection of human health through fish consumption. Given the magnitude of theses exceedance and proximity to nearby surface water consumption. Given the magnitude of theses exceedance and proximity to nearby surface water bodies the potential impact to surface water cannot be determined.

No detected contaminant in groundwater exceeded a hazard index (HI) of I or a cancer risk of greater than I x 10⁻⁵ from vapor intrusion of volatiles to indoor air for commercial populations. Vapor intrusion risk estimates for one detected contaminant in soils, mercury, exceeded MDE and EPA recommended noncarcinogenic risk levels. No detected carcinogenic soil contaminants exceeded MDE or EPA recommended risk ranges for vapor intrusion of volatiles to indoor air for commercial populations.

Four detected groundwater contaminants exceeded their corresponding MDE groundwater cleanup standard, however, groundwater, groundwater sampling was limited to VOCs only. Three detected surface soil contaminant exceeded the corresponding MDE non-residential soil cleanup standard and seven detected subsurface soil contaminants exceeded the corresponding MDE non-residential soil cleanup standard.

Please contact me (x3436) if you have any questions. \MAM attachment



| T 123112 | Dermal contact-groundwater | c-01 x 2.5 | Benzene |
|---------------------|----------------------------|------------------------|----------|
| Construction worker | | | genzene |
| Adult worker | Dermal contact-groundwater | c-01 x 8.1 | genzene |
| Youth visitor | Dermal contact-groundwater | 1.1 x 1.1 | |
| A | Dermal contact-groundwater | c-01 x 2.7 | Benzene |
| | | 2.2 x 10-4 | Benzene |
| Construction worker | Ingestion-groundwater | | Benzene |
| Adult worker | Ingestion-groundwater | 6-01 x 8.1 | <u> </u> |
| Youth visitor | Ingestion-groundwater | 1.6 x 10 ⁻³ | Benzene |
| | | | |

Note: A vapor risk from intrusion of elemental mercury vapors migrating to indoor air exists at the site. The Hazard Index for vapor intrusion to indoor air for detected subsurface soil contaminates.

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Concentrations (RBCs) for tap water. Prior to comparison with each chemical concentration, noncarcinogenic RBCs were multiplied by 0.1, in order to account for any additivity of systemic effects. Carcinogenic RBC values were not adjusted and represent a target risk level of 10⁻⁶. Carcinogenic and noncarcinogenic risk levels for all contaminants that exceeded their respective RBC screening level were evaluated quantitatively. The quantitative evaluation was based on expected future use and development scenarios and includes populations typically expected to frequent the site based on this proposed future use.

The future land use at the site was assumed to be commercial; therefore, the commercial exposure scenario was used to evaluate risk at the site. The contaminants identified at the site at concentrations that exceeded residential RBCs were further evaluated with regard to risk to relevant populations under the following scenarios (1, 2, 3, and 7):

Commercial Development:

Soil (Surface and Subsurface) and Groundwater:

Adult Worker: 70 kg body weight, 3280 cm² skin surface area (soil), 5670 cm² skin surface area (groundwater), 0.05 skin adherence factor, 250 days per year exposure for soil ingestion, 50 mg soil ingested per day, 1 liter drinking (ground) water ingested daily while at work, 1.0 m³/hour inhalation rate, 8 hour exposure time (inhalation soil and dermal contact groundwater), 25 year exposure duration, 70 year lifetime.

Construction Worker: 70 kg body weight, 3280 cm² skin surface area (soil), 5670 cm² skin surface area (groundwater), 0.05 skin adherence factor, 250 days per year exposure for soil ingestion, 480 mg soil ingested per day, 3 liter drinking (ground) water ingested per day, 1.5 m³/hour inhalation rate, 8 hour exposure time (inhalation soil), 4 hour exposure time (dermal contact groundwater), 1 year exposure duration, 70 year lifetime.

Youth Intermittent Visitor (6 - 17 years): 40 kg body weight, 4320 cm² skin surface area (soil), 13100 cm² skin surface area (groundwater), 0.02 skin adherence factor, 132 days per year exposure for soil ingestion, 100 mg soil ingested per day, 2 liter drinking (ground) water ingested, 0.56 m³/hour inhalation rate, 4 hour exposure time (soil inhalation), 0.5 hour exposure time (groundwater dermal contact), 12 year exposure duration, 70 year lifetime.

Child Intermittent Visitor (I - 6 years): 15 kg body weight, 2350 cm² skin surface area (soil), 6560 cm² skin surface area (groundwater), 0.06 skin adherence factor, 132 days per year exposure for soil ingestion, 200 mg soil ingested per day, I liter drinking (ground) water ingested, 0.32 m³/hour inhalation rate, 4 hour exposure time (soil inhalation), 0.5 hour exposure time (groundwater dermal contact), 6 year exposure duration, 70 year lifetime.

2.0 Human Health Evaluation

Soil samples were analyzed for VOCs, SVOCs, PCBs, selected pesticides, diesel and gasoline range organics (DRO, GRO) and metals. Groundwater sample analysis was limited to VOCs. Chemicals that were detected on site were compared to medium-specific screening levels

2.3 Vapor Intrusion

All volatile and semivolatile contaminants detected in soil and groundwater samples at the site were quantitatively evaluated for vapor intrusion using the Johnson and Ettinger Tier I vapor intrusion model (10).

2.4 MDE Cleanup Standards Screen

All soil and groundwater samples collected on site were compared to the MDE State of Maryland Department of the Environment Cleanup Standards for Soil and Groundwater Interim Final Guidance, August 2001 (11).

3.0 Conclusion

lio2 1.E

commercial population and EPA recommended levels for the youth visitor and construction contaminates were within MDE recommended risk ranges for the construction worker drivers. Dermal contact carcinogenic risk estimates from exposure to detected subsurface soil dibenz(a,h)anthracene and indeno-(1,2,3-cd)-pyrene were the dermal contact carcinogenic risk Benzo(a)pyrene, benzo(a)anthracene, adult worker commercial population (Table 12). adult worker commercial populations and EPA recommended risk range for the child visitor and soil contaminants exceeded MDE recommended risk range for the child visitor, youth visitor and populations (Table 11). Carcinogenic risk estimates for dermal exposure to detected subsurface soil contaminants were within MDE and EPA recommended levels for all commercial (Tables 9 and 10). Risk estimates for dermal exposure to noncarcinogenic detected subsurface contaminants were within MDE and EPA recommended levels for all commercial populations Risk estimates for dermal exposure to detected carcinogenic and noncarcinogenic surface soil levels as recommended by EPA and MDE (Tables 5 through 8) for all commercial populations. nondetected volatiles and fugitive dust from surface and subsurface soils were within acceptable estimated noncarcinogenic and carcinogenic risk levels from the inhalation of detected and were within EPA recommended levels for the construction worker commercial population. The associated with the incidental ingestion of detected carcinogenic subsurface soil contaminates dibenz(a,h)anthracene and indeno-(1,2,3-cd)-pyrene were the carcinogenic risk drivers. Risks and adult worker commercial populations (Table 4). Benzo(a)pyrene, benzo(a)anthracene, all commercial populations and EPA recommended risk ranges for the child visitor, youth visitor detected carcinogenic subsurface soil contaminates exceeded MDE recommended risk ranges for risk ranges for all commercial populations. Risk estimates for the incidental ingestion of visitor, adult worker and construction worker commercial populations and EPA recommended of detected surface soil contaminates were within MDE recommended risk ranges for the youth drivers for the child visitor population. Carcinogenic risk estimates for the incidental ingestion visitor commercial population (Table 2). Potential additive effects were the carcinogenic risk carcinogenic surface soil contaminants exceeded MDE recommended risk ranges for the child populations (Tables I and 3). Risks associated with the incidental ingestion of detected subsurface soil contaminants were within EPA and MDE recommended levels for all commercial The estimated risks from the incidental ingestion of detected noncarcinogenic surface soil and

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exceeded a hazard index (HI) of I or a cancer risk of greater than I x 10⁻⁵ for commercial populations. One detected contaminate in surface and subsurface soil, mercury, exceeded a Hazard Index of I for vapor intrusion to indoor air. No detected soil contaminates exceeded MDE or EPA recommended carcinogenic risk levels for vapor intrusion to indoor air.

3.4 MDE Cleanup Standards Screen

Maximum concentrations of all chemicals analyzed for in soil and groundwater were compared to their corresponding MDE non-residential cleanup standard (Attachment A). Four detected groundwater contaminants exceeded their corresponding MDE groundwater MDE groundwater contaminants exceeded their corresponding MDE groundwater contaminants exceeded their corresponding MDE groundwater cleanup standard. Three detected surface soil and seven detected subsurface soil contaminants cleanup standard. Three detected surface soil cleanup standard.

3.5 Evaluation Assumptions

When determining whether an increased risk to human health exists at this site, it is important to understand that this evaluation was prepared as a first level screening evaluation. Many conservative assumptions are included in this evaluation, which were developed with the understanding that if the estimated risk, using the conservative assumptions, does not exceed understanding that if the estimated risk, using the conservative assumptions, does not exceed exceed these levels.

Since this evaluation includes many conservative assumptions, a risk that exceeds EPA's recommended level of risk does not necessarily indicate an increased risk to human health. When this situation occurs, it is necessary to consider several points when determining if the risk actually does represent a threat to human health. For example, the quantitative risk estimate in this evaluation assumes people will be exposed to a contaminant at the maximum concentration all throughout the site and for the entire exposure duration. These assumptions do not take into account whether the maximum concentration is anomalous or characteristic of the site, or that biodegradation, dispersion, dilution, or other factors may decrease the contaminant concentration throughout the time of exposure.

This evaluation also assumes that the bioavailability of each contaminant is 100 percent, and that all of the contaminant taken into the body is absorbed across the digestive tract into the body. Assuming complete chemical is harmful to human health only if it is absorbed into the body. Assuming complete bioavailability does not consider the fact that it is common for a fraction of the chemical taken into the body to be excreted rather than absorbed into the body. The bioavailability of a contaminant is dependent on many factors, such as the state or form of the contaminant and if the actual size of the contaminant particle would permit incidental ingestion. These issues must be considered when evaluating the appropriateness of assuming total bioavailability of a contaminant.

Commercial Use - Incidental Ingestion/Surface soil. For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| Cancer | lp- | | n-nitrosodimethylamine | n-nitroso-di-n-propylamine | dibenz[a,h]anthracene | BENZO[B]FLUORANTHENE | BENZO[A]PYRENE | ARSENIC | Analyte | |
|---|---|--|------------------------|----------------------------|-----------------------|----------------------|----------------|---------|-------------|---------------------|
| Cancer Risk for Detected and Nondetected Compounds: | Cancer Risk for Nondetected Compounds Only: | Cancer Risk for Detected Compounds Only: | 0.329 | 0.329 | 0.329 | - | 1 | 13 | (mg/kg) | Concentration |
| nd Nondetect | ndetected Cor | Detected Cor | C | C | C | | | | Qualifier | |
| ed Compounds: | npounds Only: | mpounds Only: | 5E+01 | 7E+00 | 7E+00 | 7E-01 | 7E+00 | 2E+00 | (1/mg/kg/d) | Slope Factor |
| Sum = | Sum = | Sum = | 6E-08 | 6E-08 | 6E-08 | 2E-07 | 2E-07 | 2E-06 | LADD | Adult |
| 8.6E-06 | 3.8E-06 | 4.8E-06 | 3E-06 | 4E-07 | 4E-07 | 1E-07 | 1E-06 | 3E-06 | CR | Adult Worker |
| Sum = | Sum= | Sum = | 2E-08 | 2E-08 | 2E-08 | 7E-08 | 7E-08 | 9E-07 | LADD | Construct |
| 3.3E-06 | 1.4E-06 | 1.8E-06 | 1E-06 | 2E-07 | 2E-07 | 5E-08 | 5E-07 | 1E-06 | CR | Construction Worker |
| Sum= | Sum= | Sum= | 5E-08 | 5E-08 | 5E-08 | 2E-07 | 2E-07 | 2E-06 | LADD | Youth |
| 7.6E-06 | 3.3E-06 | 4.3E-06 | 3E-06 | 4E-07 | 4E-07 | 1E-07 | 1E-06 | 3E-06 | CR | Youth Visitor |
| Sum= | Sum = | Sum= | 1E-07 | 1E-07 | 1E-07 | 4E-07 | 4E-07 | 5E-06 | LADD | Child |
| 2.0E-05 | 8.9E-06 | 1.1E-05 | 7E-06 | 1E-06 | 1E-06 | 3E-07 | 3E-06 | 8E-06 | · CR | Child Visitor |

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.





For Frederick Site I, East Patrick and East Street Frederick, Maryland. Commercial Use - Incidental Ingestion/Subsurface soil. Table 4. Quantitative Risk Assessment - Carcinogenic

| 4.5E-04 * | Sum = | 1.7E-04 * | Sum= | 7.4E-05 | Sum = | 1.9E-04 * | Sum = | ed Compounds: | nd Nondetecti | Cancer Risk for Detected and Nondetected Compounds: | |
|---------------|-------|-----------|---------------|---------------------|------------|-----------|--------------|---------------|---------------|---|----------------------------|
| 7.7E-06 | Sum = | 2.9E-06 | Sum= | 1.2E-06 | Sum = | 3.2E-06 | Sum = | npounds Only: | detected Con | Cancer Risk for Nondetected Compounds Only: | |
| 4.5E-04 * | Sum= | 1.7E-04 * | Sum= | 7.2E-05 | Sum = | 1.9E-04 * | Sum = | npounds Only: | Detected Con | Cancer Risk for Detected Compounds Only: | |
| 7E-06 | 1E-07 | 3E-06 | 5E-08 | 1E-06 | 2E-08 | 3E-06 | 6E-08 | 5E+01 | С | 0.3205 | n-nitrosodimethylamine |
| 9E-07 | 1E-07 | 3E-07 | 5E-08 | 2E-07 | 2E-08 | 4E-07 | 6E-08 | 7E+00 | С | 0.3205 | n-nitroso-di-n-propylamine |
| 1E-05 | 2E-05 | 5E-06 | 7E-06 | 2E-06 | 3E-06 | 6E-06 | 8E-06 | 7E-01 | | 44 | Indeno-(1,2,3-cd)-pyrene |
| 3E-05 | 4E-06 | 1E-05 | 1E-06 | 4E-06 | 6E-07 | 1E-05 | 2E-06 | 7E+00 | | 8.8 | Dibenz[a,h]anthracene |
| 2E-06 | 2E-05 | 6E-07 | 8E-06 | 2E-07 | 3E-06 | 7E-07 | 9E-06 | 7E-02 | | 51 | Benzo[k]fluoranthene |
| 1E-05 | 2E-05 | 5E-06 | 6E-06 | 2E-06 | 3E-06 | 5E-06 | 7E-06 | 7E-01 | | 41 | Benzo[b]fluoranthene |
| 4E-04 | 5E-05 | 1E-04 * | 2E-05 | 6E-05 | 8E-06 | 2E-04 * | 2E-05 | 7E+00 | | 120 | Benzo[a]pyrene |
| 2E-05 | 3E-05 | 8E-06 | 1E-05 | 3E-06 | 5E-06 | 9E-06 | 1E-05 | 7E-01 | | 70 | Benzo[a]anthracene |
| 9E-06 | 6E-06 | 3E-06 | 2E-06 | 1E-06 | 9E-07 | 4E-06 | 2E-06 | 2E+00 | | 14 | Arsenic |
| CR | LADD | CR | LADD | CR | LADD | CR | LADD | (1/mg/kg/d) | Qualifier | (mg/kg) | Analyte |
| Child Visitor | Child | Visitor | Youth Visitor | Construction Worker | Constructi | Vorker | Adult Worker | Slope Factor | | Concentration | |
| | | | | | | | | | | | |

| LADD = lifetime average daily dose $(mg/kg/d)$. | |
|---|--|
| CR = Cancer risk. | |
| Compounds printed in lowercase letters were not detected in any sample. | |

* Cancer risk exceeds 10E-4.



Table 6. Quantitative Risk Assessment - Carcinogenic Commercial Use - Inhalation of Volatiles and Fugitive Dust (Surface Soil). For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| | Concentration | | Slope Factor | | Adult | Adult Worker | Construct | Construction Worker | Youth | Youth Visitor | Child | Child Visitor |
|------------------------|--|--------------|------------------|---------------|-------|--------------|-----------|---------------------|-------|---------------|-------|---------------|
| Analyte | (mg/kg) | Qualifier | | PEF/VF | LADD | CR | LADD | CR | LADD | CR | LADD | CR |
| Particulate Emission: | | | | PEF | | | | | | | | |
| Arsenic | 13 | | 2E+01 | 9.63E+08 | 4E-10 | 6E-09 | 2E-11 | 3E-10 | SE-11 | 7E-10 | 4F-11 | SE-10 |
| Chromium | 26 | | 4E+01 | 9.63E+08 | 8E-10 | 3E-08 | SE-11 | 2E-09 | 9E-11 | 4F-09 | 7F-11 | 36.00 |
| Benzo[a]pyrene | - | | 3E+00 | 9.63E+08 | 3E-11 | 9E-11 | 2E-12 | 5E-12 | 4E-12 | F.I. | 3F-17 | 0E-17 |
| n-nitrosodimethylamine | 0.329 | U | 5E+01 | 9.63E+08 | IE-11 | 5E-10 | 6E-13 | 3E-11 | 1E-12 | 6E-11 | 9E-13 | SE-11 |
| Volatilization: | | | | VF | | | | | | | | |
| Arsenic | 13 | | 2E+01 | | | | | | | | | |
| Chromium | 26 | | 4E+01 | | | | | | | | | |
| Benzo[a]pyrene | _ | | 3E+00 | 2.35E+07 | 1E-09 | 4E-09 | 7E-11 | 2E-10 | 1E-10 | 5F-10 | 1F-10 | 1E.10 |
| n-nitrosodimethylamine | 0.329 | C | 5E+01 | | | | | | | | i | |
| | Particle Cancer Risk Totals for Detected Compounds Only: | isk Totals | for Detected Cor | npounds Only: | Sum = | 3.7E-08 | Sum = | 2.2E-09 | Sum = | 4.6E-09 | Sum = | 3.5E-09 |
| | Particle Cancer Risk Totals for Nondetected Compounds Only: | Totals for | Nondetected Con | npounds Only: | Sum = | 4.9E-10 | Sum = | 2.9E-11 | Sum = | 6.0E-11 | Sum = | 4.6E-11 |
| 7 | Volatile Cancer Risk Totals for Detected Compounds Only: | isk Totals | for Detected Con | npounds Only: | Sum = | 3.7E-09 | Sum = | 2.2E-10 | Sum = | 4.6E-10 | Sum= | 3.5E-10 |
| 1 | Volatile Cancer Risk Totals for Nondetected Compounds Only: | Totals for I | Nondetected Con | npounds Only: | Sum = | 3 | Sum = | 1 | Sum = | i. | Sum= | |
| | Total Cancer Risk via Inhalation (Detected and nondetected compounds): | 1 (Detected | and nondetecter | d compounds): | Sum = | 4.1E-08 | Sum = | 2.5E-09 | Sum = | 5.1E-09 | Sum = | 3 95-00 |

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

Cancer risk exceeds 10E-4.

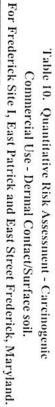
Commercial Use - Inhalation of Volatiles and Fugitive Dust (Subsurface Soil). For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| | Concentration | | Slone Factor | | Adult | Adult Worker | Construct | Construction Worker | Youth | Youth Visitor | Child | Child Visitor |
|------------------------|--|-------------|-------------------|---------------|-------|--------------|-----------|---------------------|-------|---------------|-------|---------------|
| Analyte | (mg/kg) | Qualifier | 1 | PEF/VF | LADD | CR | LADD | CR | LADD | CR | LADD | CR |
| Particulate Emission: | | | | PEF | | | | | | | | |
| Arsenic | 14 | | 2E+01 | 9.63E+08 | 4E-10 | 6E-09 | 2E-11 | 4E-10 | 5E-11 | 8E-10 | 4E-11 | 6E-10 |
| Benzo[a]pyrene | 120 | | 3E+00 | 9.63E+08 | 3E-09 | 1E-08 | 2E-10 | 6E-10 | 4E-10 | 1E-09 | 3E-10 | 1E-09 |
| n-nitrosodimethylamine | 0.3205 | ⊂ | 5E+01 | 9.63E+08 | 9E-12 | 5E-10 | 6E-13 | 3E-11 | 1E-12 | 6E-11 | 9E-13 | 4E-11 |
| Volatilization: | | | | VF | | | | | | , | | |
| Arsenic | 14 | | 2E+01 | | | | | | | | | |
| Benzo[a]pyrene | 120 | | 3E+00 | 2.35E+07 | 1E-07 | 4E-07 | 9E-09 | 3E-08 | 2E-08 | 5E-08 | 1E-08 | 4E-08 |
| n-nitrosodimethylamine | 0.3205 | U | 5E+01 | | | | | | | | | |
| | Particle Cancer Risk Totals for Detected Compounds Only: | tisk Totals | for Detected Cor | npounds Only: | Sum = | 1.7E-08 | Sum = | 1.0E-09 | Sum = | 2.1E-09 | Sum = | 1.6E-09 |
| 7 | Particle Cancer Risk Totals for Nondetected Compounds Only: | Totals for | Nondetected Cor | npounds Only: | Sum = | 4.7E-10 | Sum = | 2.8E-11 | Sum = | 5.9E-11 | Sum = | 4.5E-11 |
| 1 | Volatile Cancer Risk Totals for Detected Compounds Only: | lisk Totals | for Detected Cor | npounds Only: | Sum = | 4.4E-07 | Sum= | 2.7E-08 | Sum = | 5.5E-08 | Sum = | 4.2E-08 |
| | Volatile Cancer Risk Totals for Nondetected Compounds Only: | Totals for | Nondetected Con | npounds Only: | Sum = | 1 | Sum= | 1 | Sum = | 1 | Sum = | ı |
| | Total Cancer Risk via Inhalation (Detected and nondetected compounds): | n (Detecter | d and nondetected | d compounds): | Sum = | 4.6E-07 | Sum= | 2.8E-08 | Sum= | 5.7E-08 | Sum = | 4.3E-08 |

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.







| | | | n-nitrosodimethylamine | n-nitroso-di-n-propylamine | dibenz[a,h]anthracene | Benzo[b]fluoranthene | Benzo[a]pyrene | Arsenic | Analyte | | |
|---|---|--|------------------------|----------------------------|-----------------------|----------------------|----------------|---------|-------------|---------------------|--|
| Cancer Risk for Detected and Nondetected Compounds: | Cancer Risk for Nondetected Compounds Only: | Cancer Risk for Detected Compounds Only: | 0.329 | 0.329 | 0.329 | - | | 13 | (mg/kg) | Concentration | |
| nd Nondetec | ndetected Co | Detected Co | C | = | C | | | | Qualifier | | |
| ted Compounds: | mpounds Only: | mpounds Only: | | 7E+00 | 7E+00 | 7E-01 | 7E+00 | 2E+00 | (1/mg/kg/d) | Slope Factor | |
| Sum = | Sum= | Sum= | | 3E-08 | 3E-08 | 1E-07 | 1E-07 | 3E-07 | LADD | Adult | |
| 1.7E-06 | 4.4E-07 | 1.3E-06 | | 2E-07 | 3E-07 | 8E-08 | 8E-07 | 5E-07 | CR | Adult Worker | |
| Sum= | Sum = | Sum= | | 1E-09 | 2E-09 | 5E-09 | 5E-09 | 1E-08 | LADD | Construct | |
| 8.0E-08 | 2.0E-08 | 6.0E-08 | | 8E-09 | 1E-08 | 3E-09 | 3E-08 | 2E-08 | CR | Construction Worker | |
| Sum = | Sum = | Sum = | | 2E-08 | 2E-08 | 6E-08 | 6E-08 | 2E-07 | LADD | Youth | |
| 1.0E-06 | 2.5E-07 | 7.6E-07 | | 1E-07 | 1E-07 | 4E-08 | 4E-07 | 3E-07 | CR | Youth Visitor | |
| Sum = | Sum= | Sum = | | 8E-08 | 1E-07 | 3E-07 | 3E-07 | 9E-07 | LADD | Chile | |
| 5.3E-06 | 1.3E-06 | 4.0E-06 | | 6E-07 | 8E-07 | 2E-07 | 2E-06 | 1E-06 | CR | Child Visitor | |



Cancer risk exceeds 10E-4. LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

Table 12. Quantitative Risk Assessment - Carcinogenic Commercial Use - Dermal Contact/Subsurface soil. For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| = 3.4E-04 | Sum = | 6.5E-05 | Sum = | 5.1E-06 | Sum = | 1.1E-04 * | Sum = | npounds Only: | Detected Con | Cancer Risk for Detected Compounds Only: | |
|---------------|-------|---------|---------------|---------------------|------------|--------------|-------|---------------|--------------|--|----------------------------|
| | | | | | | | | | U | 0.3205 | n-nitrosodimethylamine |
| 5E-07 | 8E-08 | 1E-07 | 2E-08 | 8E-09 | 1E-09 | 2E-07 | 3E-08 | 7E+00 | U | 0.3205 | n-nitroso-di-n-propylamine |
| 1E-05 | 1E-05 | 2E-06 | 3E-06 | 2E-07 | 2E-07 | 3E-06 | 5E-06 | 7E-01 | | 44 | Indeno-(1,2,3-cd)-pyrene |
| 2E-05 | 3E-06 | 4E-06 | 5E-07 | 3E-07 | 4E-08 | 7E-06 | 9E-07 | 7E+00 | | 8.8 | Dibenz[a,h]anthracene |
| 1E-06 | 2E-05 | 2E-07 | 3E-06 | 2E-08 | 2E-07 | 4E-07 | 5E-06 | 7E-02 | | 51 | Benzo[k]fluoranthene |
| 9E-06 | 1E-05 | 2E-06 | 2E-06 | 1E-07 | 2E-07 | 3E-06 | 4E-06 | 7E-01 | | 41 | Benzo[b]fluoranthene |
| 3E-04 | 4E-05 | 5E-05 | 7E-06 | 4E-06 | 6E-07 | 9E-05 | 1E-05 | 7E+00 | | 120 | Benzo[a]pyrene |
| 2E-05 | 2E-05 | 3E-06 | 4E-06 | 2E-07 | 3E-07 | 5E-06 | 7E-06 | 7E-01 | | 70 | Benzo[a]anthracene |
| 2E-06 | 1E-06 | 3E-07 | 2E-07 | 2E-08 | 2E-08 | 5E-07 | 3E-07 | 2E+00 | | 14 | Arsenic |
| CR | LADD | CR | LADD | CR | LADD | CR | LADD | (1/mg/kg/d) | Qualifier | (mg/kg) | Analyte |
| Child Visitor | Chil | Visitor | Youth Visitor | Construction Worker | Constructi | Adult Worker | Adult | Slope Factor | | Concentration | |



LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

^{*} Cancer risk exceeds 10E-4.

For Frederick Site I, East Patrick and East Street Frederick, Maryland. Commercial Use - Ingestion of Drinking Water/Groundwater. Table 14. Quantitative Risk Assessment - Carcinogenic

| 2E-07 IE-06 IE-07 1E-07 IE-06 9E-08 8E-08 IE-06 5E-08 2E-07 IE-06 IE-07 6E-07 IE-06 4E-07 2E-06 IE-06 IE-06 1.6E-03 * Sum = 1.1E-03 * | Sum = | 1.9E-05 | | | | - | | Cancer Rick for Detected and Nondatected Commonade. | |
|---|-------|---------------------|-----------|--------------|-------|---------------|--------------|---|-----------------------------|
| 1E-06 1E-07 1E-06 9E-08 1E-06 5E-08 1E-06 1E-07 1E-06 4E-07 1E-06 1E-06 | Sum = | | Sum = | 1.6E-04 * | Sum= | npounds Only: | detected Cor | Cancer Risk for Nondetected Compounds Only: | |
| 1E-06 1E-06 1E-06 1E-06 | | 2.2E-04 * | Sum= | 1.8E-03 * | Sum= | npounds Only: | Detected Cor | Cancer Risk for Detected Compounds Only: | |
| 1E-06 1E-06 1E-06 | 2E-06 | 3E-07 | 2E-07 | 2E-06 | 2E-06 | 1E+00 | C | 0.5 | vinyl chloride |
| 1E-06 1E-06 1E-06 | 2E-06 | 8E-08 | 2E-07 | 7E-07 | 2E-06 | 4E-01 | U | 0.5 | trichloroethene |
| 1E-06 1E-06 | 2E-06 | 2E-08 | 2E-07 | 2E-07 | 2E-06 | 1E-01 | U | 0.5 | trans-1,3-dichloropropene |
| 1E-06 | 2E-06 | 1E-08 | 2E-07 | 9E-08 | 2E-06 | 5E-02 | C | 0.5 | tetrachloroethene |
| 1E-06 | 2E-06 | 2E-08 | 2E-07 | 1E-07 | 2E-06 | 8E-02 | C | 0.5 | dibromochloromethane |
| | 2E-06 | 2E-08 | 2E-07 | 2E-07 | 2E-06 | 1E-01 | U | 0.5 | cis-1,3-dichloropropene |
| 2E-07 1E-06 1E-07 | 2E-06 | 3E-08 | 2E-07 | 2E-07 | 2E-06 | 1E-01 | C | 0.5 | carbon tetrachloride |
| 1E-07 1E-06 6E-08 | 2E-06 | 1E-08 | 2E-07 | 1E-07 | 2E-06 | 6E-02 | С | 0.5 | bromodichloromethane |
| 4E-08 1E-06 2E-08 | 2E-06 | 5E-09 | 2E-07 | 4E-08 | 2E-06 | 2E-02 | C | 0.5 | 1,4-dichlorobenzene |
| 1E-07 1E-06 9E-08 | 2E-06 | 2E-08 | 2E-07 | 2E-07 | 2E-06 | 9E-02 | C | 0.5 | 1,2-dichloroethane |
| 1E-04 * 1E-06 9E-05 | 2E-06 | 2E-05 | 2E-07 | 1E-04 * | 2E-06 | 9E+01 | U | 0.5 | 1,2-dibromoethane |
| 2E-06 1E-06 1E-06 | 2E-06 | 3E-07 | 2E-07 | 2E-06 | 2E-06 | 1E+00 | U | 0.5 | 1,2-dibromo-3-chloropropane |
| 9E-07 1E-06 6E-07 | 2E-06 | 1E-07 | 2E-07 | 1E-06 | 2E-06 | 6E-01 | С | 0.5 | 1,1-dichloroethene |
| 9E-08 1E-06 6E-08 | 2E-06 | 1E-08 | 2E-07 | 1E-07 | 2E-06 | 6E-02 | C | 0.5 | 1,1,2-trichloroethane |
| 3E-07 1E-06 2E-07 | 2E-06 | 4E-08 | 2E-07 | 3E-07 | 2E-06 | 2E-01 | U | 0.5 | 1,1,2,2-tetrachloroethane |
| 4E-08 1E-06 3E-08 | 2E-06 | 5E-09 | 2E-07 | 5E-08 | 2E-06 | 3E-02 | U | 0.5 | 1,1,1,2-tetrachloroethane |
| 2E-03 * 2E-02 1E-03 | 3E-02 | 2E-04 • | 4E-03 | 2E-03 • | 3E-02 | 6E-02 | | 9600 | Benzene |
| 1E-06 1E-05 7E-07 | 2E-05 | 1E-07 | 2E-06 | 1E-06 | 2E-05 | 7E-02 | | 4.9 | 1,2-Dichloropropane |
| CR LADD CR | LADD | CR | LADD | CR | LADD | (1/mg/kg/d) | Qualifier | (ug/L) | Analyte |
| Youth Visitor Child Visitor | Youth | Construction Worker | Construct | Adult Worker | Adult | Slope Factor | | Concentration | |

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

• Cancer risk exceeds 10E-4.

Table 16. Quantitative Risk Assessment - Carcinogenic Commercial Use - Dermal Contact/Groundwater. For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| | | | vinyl chloride | trichloroethene | trans-1,3-dichloropropene | tetrachloroethene | dibromochloromethane | cis-1,3-dichloropropene | carbon tetrachloride | bromodichloromethane | 1,4-dichlorobenzene | 1,2-dichloroethane | 1,2-dibromoethane | 1,2-dibromo-3-chloropropane | 1,1-dichloroethene | 1,1,2-trichloroethane | 1,1,2,2-tetrachloroethane | 1,1,1,2-tetrachloroethane | Benzene | 1,2-Dichloropropane | Analyte | |
|---|---|--|----------------|-----------------|---------------------------|-------------------|----------------------|-------------------------|----------------------|----------------------|---------------------|--------------------|-------------------|-----------------------------|--------------------|-----------------------|---------------------------|---------------------------|---------|---------------------|-------------|---------------------|
| Cancer Risk for Detected and Nondetected Compounds: | Cancer Risk for Nondetected Compounds Only: | Cancer Risk for Detected Compounds Only: | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 9600 | 4.9 | (ug/L) | Concentration |
| nd Nondetec | idetected Co | Detected Co | _ | C | С | U | C | C | U | _ | U | C | U | U | C | U | U | П | | | Qualifier | |
| ted Compounds: | mpounds Only: | mpounds Only: | 1E+00 | 4E-01 | 1E-01 | 5E-02 | 8E-02 | 1E-01 | 1E-01 | 6E-02 | 2E-02 | 9E-02 | 9E+01 | 1E+00 | 6E-01 | 6E-02 | 2E-01 | | 6E-02 | 7E-02 | (1/mg/kg/d) | Slope Factor |
| Sum = | Sum = | Sum= | 6E-07 | 1E-06 | 4E-07 | 4E-06 | 3E-07 | 4E-07 | 2E-06 | 5E-07 | 5E-06 | 4E-07 | | | 1E-06 | 7E-07 | 7E-07 | | 3E-02 | 8E-06 | LADD | Adult |
| 1.8E-03 * | 3.0E-06 | 1.8E-03 * | 8E-07 | 5E-07 | 4E-08 | 2E-07 | 3E-08 | 4E-08 | 2E-07 | 3E-08 | 1E-07 | 4E-08 | | | 8E-07 | 4E-08 | 1E-07 | | 2E-03 * | 5E-07 | CR | Adult Worker |
| Sum = | Sum = | Sum = | 1E-08 | 3E-08 | 9E-09 | 8E-08 | 6E-09 | 9E-09 | 3E-08 | 9E-09 | 1E-07 | 8E-09 | | | 3E-08 | 1E-08 | 1E-08 | | 6E-04 | 2E-07 | LADD | Construct |
| 3.5E-05 | 6.0E-08 | 3.5E-05 | 2E-08 | 1E-08 | 9E-10 | 4E-09 | 5E-10 | 9E-10 | 5E-09 | 6E-10 | 2E-09 | 8E-10 | | | 2E-08 | 8E-10 | 3E-09 | | 4E-05 | 1E-08 | CR | Construction Worker |
| Sum = | Sum = | Sum = | 4E-08 | 8E-08 | 3E-08 | 2E-07 | 2E-08 | 3E-08 | 1E-07 | 3E-08 | 3E-07 | 3E-08 | | | 8E-08 | 4E-08 | 5E-08 | | 2E-03 | SE-07 | LADD | Youth |
| 1.1E-04 * | 1.9E-07 | 1.1E-04 * | 5E-08 | 3E-08 | 3E-09 | 1E-08 | 2E-09 | 3E-09 | 1E-08 | 2E-09 | 8E-09 | 2E-09 | ā | | 5E-08 | 2E-09 | 9E-09 | | 1E-04 * | 3E-08 | CR | Youth Visitor |
| Sum = | Sum = | Sum = | 2E-08 | 5E-08 | 2E-08 | 2E-07 | 1E-08 | 2E-08 | 7E-08 | 2E-08 | 2E-07 | 2E-08 | | | 5E-08 | 3E-08 | 3E-08 | | 1E-03 | 3E-07 | LADD | Child |
| 7.5E-05 | 1.3E-07 | 7.5E-05 | 3E-08 | 2E-08 | 2E-09 | 8E-09 | 1E-09 | 2E-09 | 1E-08 | 1E-09 | 5E-09 | 2E-09 | | | 3E-08 | 2E-09 | 6E-09 | | 8E-05 | 2E-08 | CR | Child Visitor |

LADD = lifetime average daily dose (mg/kg/d). CR = Cancer risk. Compounds printed in lowercase letters were not detected in any sample.

Cancer risk exceeds 10E-4.

Freshwater Ambient Water Quality Criteria Table 18. Comparison of detected groundwater contaminant concentrations to MDE and EPA

For Frederick Site I, East Patrick and East Street Frederick, Maryland.

| noitqmus | Fish Con | | er Criteria | Freshwate | | | |
|-----------|----------|-----------------|-------------|-----------------|------------|---------------|---------------------|
| (yino mei | | uality Criteria | EPA Water Q | c Life Criteria | MDE Aquati | | |
| NSEPA | WDE | Сһгопіс: | :91uoA | Chronic: | :93u2A | Concentration | Analyte |
| | | | | 37.53 | | 6.4 | 1,2-Dichloropropane |
| 17 | | | 5300 € | - | | 0096 | Benzene |
| 29000 | | | 3 2000 € | | | 0072 | Ethylbenzene |
| | •• | | | ((-) | | 760 | Isopropylbenzene |
| 300000 | | | 2 00271 | | | 3100 | Toluene |
| 1550 | | | | | 1000 | 00tL | Xylene, Total |

riteria values. Hardness dependent criteria (100 mg/L CaCO3 used); f = pH dependent criteria, (7.8 pH used); g = Silver has a hardness dependent value as well as different proposed = The toxiciety of certain substances is decreased or increased by hardness or pH. For these substances MDE may modify the criteria at a site; b = The fresh water aquatic life criteria for cyanide apply only to those waters of the State designed as uses III, III-P, IV, or IV-P. In all other waters of the State cyanide acute and chronic aquatic life riteria of 31.3 and 7.3 ug/L, respectively, apply; c = Insufficient data to develop criteria. Value represents the lowest observed effect level (LOEL); d = Proposed criterion; e Hardness dependent criteria (LOEL); apply; f = Pul dependent criteria (LOEL); d = Proposed criterion; e

ontaminant concentrations are reported in units of ug/L.

ATTACHMENT A

| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | Adjusted Tap Water RBC | Ch | Pass Tier I Screen? | Adjusted Soil RBC (Residential) | Pass Tier I Screen? |
|--------------------|---------------------------|---------|--------|---------------|-------|-------|---------------------------|--------|------------------------|------------------------------------|------------------------|
| Water: Groundwater | ndwater | | | | | | | | | | |
| Organics: | | | | | | | | | | | |
| I-WM | Carbon tetrachloride | 56235 | water | 0.5 | | ug/l | 1.62E-01 | С | Fail | ı | : |
| MW-1 | Chlorobenzene | 108907 | water | 0.5 | U | ug/l | 1.06E+01 | ż | Pass | 1 | : |
| MW-1 | Chloroethane | 75003 | water | 0.5 | U | ug/l | 3.64E+00 | C | Pass | ı | |
| I-WM | Chloroform | 67663 | water | 0.5 | □ | ug/l | 1.55E-01 | С | Fail | : | ı: |
| MW-1 | Chloromethane | 74873 | water | 0.5 | Ξ | ug/1 | 2.11E+00 | С | Pass | : | E |
| MW-1 | cis-1,2-Dichloroethene | 156592 | water | 0.5 | U | ug/l | 6.08E+00 | * Z | Pass | : | ı |
| MW-2 | cis-1,3-Dichloropropene | 542756 | water | 0.5 | U | ug/l | 4.36E-01 | С | Fail | : | : |
| MW-2 | Dibronochloronethane | 124481 | water | 0.5 | C | ug/l | 1.26E-01 | С | Fail | 1 | ı |
| MW-2 | Dichlorodifluoronethane | 75718 | water | 0.5 | _ | ug/I | 3.48E+01 | · Z | Pass | 1 | : |
| MW-1 | Dichloromethane | 75092 | water | 0.5 | U | ug/l | 4.10E+00 | С | Pass | | : |
| MW-2 | Ethylbenzene | 100414 | water | 5700 | | ug/l | 3.25E+00 | С | Fail | 1 | : |
| MW-2 | Isopropylbenzene | 98828 | water | 260 | | ug/I | 6.58E+01 | ż | Fail | 1 | : |
| MW-2 | Methyl Acetate | 79209 | water | 0.5 | U | ug/l | 6.08E+02 | ż | Pass | 1 | : |
| MW-2 | Methyl-t-butyl ether | 1634044 | water | 0.5 | | ug/l | 2.64E+00 | С | Pass | Ē | • |
| MW-2 | Methylcyclohexane | 108872 | water | 0.5 | = | ug/l | 6.28E+02 | z | Pass | Ē | |
| MW-2 | Styrene | 100425 | water | 0.5 | C | ug/I | 1.62E+02 | * Z | Pass | ı | : |
| MW-2 | Tetrachloroethene | 127184 | water | 0.5 | П | ug/l | 6.35E-02 | С | Fail | I | : |
| MW-1 | Toluene | 108883 | water | 3100 | | ug/l | 7.47E+01 | * Z | Fail | 1 | : |
| MW-2 | trans-1,2-Dichloroethene | 156605 | water | 0.5 | _ | ug/l | 1.22E+01 | z | Pass | 1 | ı |
| I-WM | trans-1,3-Dichloropropene | 542756 | water | 0.5 | _ | ug/l | 4.36E-01 | C | Fail | 1 | : |
| MW-2 | Trichloroethene | 79016 | water | 0.5 | | ug/l | 2.64E-02 | С | Fail | 1 | ı |
| MW-2 | Trichlorofluoronæthane | 75694 | water | 0.5 | | ug/l | 1.29E+02 | z | Pass | 1 | : |
| MW-2 | Vinyl chloride | 75014 | water | 0.5 | C | ug/l | 1.50E-02 | С | Fail | 3 | : |
| MW-2 | Xylene, Total | 1330207 | water | 7400 | | ug/l | 1.22E+03 | ż | Fail | 1 | 1 |
| | | | | | | | | | | | |

^{*} RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | Adjusted Tap Water RBC | Pass Tier I Screen? | Adjusted Soil RBC (Residential) | 1 | Pass Tier I Screen? |
|----------------|---|------------------|----------------|--------------------|----------|-------|---------------------------|------------------------|------------------------------------|---|------------------------|
| <u>soil</u> | | | | | | | | | | | |
| Surface: | | | | | | | | | | | |
| Organics: | | | | | | | | | | | |
| FS-2 | 1,1,1,2-Tetrachlorocthane | 630206 | soil | 0.003 | C | mg/kg | : | : | 2 50E+01 | 0 | Dage |
| FS-2 | 1,1,1-Trichloroethane | 71556 | soil | 0.003 | □ | mg/kg | : | : | 2 20E+03 | * Z (| Dage |
| FS-2 | 1,1,2,2-Tetrachloroethane | 79345 | soil | 0.003 | _ | mg/kg | : | : | 3 20F+00 | n : | Page |
| FS-2 | 1,1,2-Trichloroethane | 79005 | soil | 0.003 | | mg/kg | : | : | 1 10F+01 |) (| Pacc |
| FS-2 | 1,1-Dichloroethane | 75343 | soil | 0.003 | C | mg/kg | 1 | : | | * Z (| Pace |
| FS-2 | 1,1-Dichloroethene | 75354 | soil | 0.003 | П | mg/kg | | : | | n : | Pacc |
| FS-2 | 1,2,3-Trichlorobenzene | 120821 | soil | 0.003 | | mg/kg | ı | : | | ż | Pass |
| FS-8 | 1,2,4-Trichlorobenzene | 120821 | soil | 0.329 | \Box | mg/kg | 1 | : | | * Z | Pass |
| FS-2 | 1,2-Dibrono-3-chloropropane | 96128 | soil | 0.003 | C | mg/kg | 1 | 1 | | C | Pass |
| FS-2 | 1,2-Dibronwethane | 106934 | soil | 0.003 | ⊂ | mg/kg | f | 1 | 7.50E-03 | С | Pass |
| FS-8 | 1,2-Dichlorobenzene | 95501 | soil | 0.329 | U | mg/kg | 1 | Į. | | * Z | Pass |
| FS-2 | 1,2-Dichloroethane | 107062 | soil | 0.003 | U | mg/kg | ı | ı | | C | Pass |
| FS-2 | 1,2-Dichloropropane | 78875 | soil | 0.003 | | mg/kg | 1 | ī | 9.40E+00 | С | Pass |
| FS-8 | 1,3-Dichlorobenzene | 541731 | soil | 0.329 | | mg/kg | 1 | i | | ż | Pass |
| FS-8 | 1,4-Dichlorobenzene | 106467 | soil | 0.329 | C | mg/kg | 3 | : | | C | Pass |
| FS-8 | 2,4,5-Trichlorophenol | 95954 | soil | 0.329 | C | mg/kg | 1 | 1 | | z | Pass |
| FS-8 | 2,4,6-Trichlorophenol | 88062 | soil | 0.329 | U | mg/kg | 1 | 1 | | C | Pass |
| FS-8 | 2,4-Dichlorophenol | 120832 | soil | 0.329 | | mg/kg | 1 | 1 | | * Z | Pass |
| FS-8 | 2,4-Dinætlylphenol | 105679 | soil | 0.329 | U | mg/kg | | 1 | | z | Pass |
| FS-8 | 2,4-Dinitrophenol | 51285 | soil | 0.329 | | mg/kg | ı | 1 | | ž | Pass |
| FS-8 | 2,4-Dinitrotoluene | 121142 | soil | 0.329 | U | mg/kg | Ē | : | | ž | Pass |
| FS-8 | 2,6-Dinitrotoluene | 606202 | soil | 0.329 | C | mg/kg | ī | : | 7.80E+00 • | ż | Pass |
| FS-2 | 2-Butanone | 78933 | soil | 0.016 | | mg/kg | i | : | 4.70E+03 • | z | Pass |
| FS-8 | 2-Chloronaphthalene | 91587 | soil | 0.329 | U | mg/kg | 1 | r | 6.30E+02 • | z | Pass |
| FS-8 | 2-Cliforophenol | 95578 | soil | 0.329 | | mg/kg | 1 | ı | 3.90E+01 • | z | Pass |
| FS-2 | 2-Hexanone | 591786 | soil | 0.016 | | mg/kg | : | ı | 3.10E+02 * | z | Pass |
| FS-8 | 2-Methylnaphthalene | 91576 | soil | 0.329 | | mg/kg | 1 | 1 | 1.60E+02 • | z | Pass |
| * RBC adjusted | * RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic: ('= carcinogenic Note: no RBC value eviete for incer- | -carcinogenic: (| = carcinopenie | Note: no RRC value | evicte 6 | | | 1 | A | * | |

^{*} RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Attachn 'A (cont.). Identification of Chemicals of Concern: Frederick Site I, Frederick, Maryland; PCA Code: 65586

| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | Adjusted Tap Water RBC | Pass Tier I Screen? | Adjusted Soil RBC (Residential) | RBC () | Pass Tier 1 Screen? |
|----------------|---|-------------------|--------|---------------|----------|-------|---------------------------|------------------------|---------------------------------|-----------|------------------------|
| <u>soil</u> | | | | | | | | | | | |
| Surface: | | | | | | | | | | | |
| Organics: | | | | | | | | | | | |
| FS-8 | Benzyl butyl phthalate | 85687 | soil | 0.329 | C | mg/kg | ı | 1 | 1 60F+03 | * Z | Dass |
| FS-8 | Bis(2-chloroisopropyl)ether | 108601 | soil | 0.329 | \Box | mg/kg | : | ı | 9 10E+00 |) : | Dace . |
| FS-8 | Bis-(2-chloroethyl)ether | 111444 | soil | 0.329 | C | mg/kg | ı | ı | 5 80F-01 |) (| Dace |
| FS-8 | Bis-(2-ethylhexyl)-phthalate | 117817 | soil | 0.329 | C | mg/kg | ı | ı | 4 605+01 | י כ | Dags |
| FS-2 | Bromodichloronethane | 75274 | Soil | 0.003 | C | mg/kg | l | | 1,005+01 |) (| F 455 |
| FS-2 | Bromoform | 75252 | soil | 0.003 | _ | mg/kg | ; | | 8 105+01 |) (| Page |
| FS-2 | Bromonethane | 74839 | soil | 0.003 | C | mg/kg | | | | * | P 433 |
| FS-8 | Carbazole | 86748 | soil | 0.329 | C | mg/kg | 1 | | | ר כ | Page |
| FS-2 | Carbon disulfide | 75150 | soil | 0.003 | U | mg/kg | 1 | ı | | * (| Pace |
| FS-2 | Carbon tetrachloride | 56235 | soil | 0.003 | C | mg/kg | ľ | ı | | 0 | Pacc |
| FS-8 | Chlordane | 57749 | soil | 0.033 | u | mg/kg | : | 0 | 1.80E+00 | С | Pacc |
| FS-2 | Chlorobenzene | 108907 | soil | 0.003 | | mg/kg | 1 | ı | | z | Pacc |
| FS-2 | Chloroethane | 75003 | soil | 0.003 | U | mg/kg | I | : | | C | Pass |
| FS-2 | Chloroform | 67663 | soil | 0.003 | U | mg/kg | 1 | ı | | ż | Pass |
| FS-2 | Chloronethane | 74873 | soil | 0.003 | □ | mg/kg | 1 | 1 | | C | Pacc |
| FS-8 | Chrysene | 218019 | soil | 8.1 | | mg/kg | : | : | 8.80E+01 | C | Pass |
| FS-2 | cis-1,2-Dichloroethene | 156592 | soil | 0.003 | | mg/kg | ï | : | | * Z | Pass |
| FS-2 | cis-1,3-Dichloropropene | 542756 | soil | 0.003 | L | mg/kg | * | ı | | C | Pass |
| FS-8 | d-BHC | 58899 | soil | 0.0065 | U | mg/kg | 1 | • | 4.90E-01 | C | Pass |
| FS-8 | Di-n-butyl phthalate | 84742 | soil | 0.329 | \Box | mg/kg | | : | | z | Pass |
| FS-8 | Di-ii-octyl phthalate | 117840 | soil | 0.329 | U | mg/kg | 1 | : | | ž | Pass |
| FS-8 | Dibenz[a,h]anthracene | 53703 | soil | 0.329 | | mg/kg | | 3 | | С | Fail |
| FS-8 | Dibenzofuran | 132649 | soil | 0.329 | U | mg/kg | ľ | ı | 3.10E+01 • | * Z | Pass |
| FS-2 | Dibronochloronethane | 124481 | soil | 0.003 | C | mg/kg | 1 | | | С | Pass |
| FS-2 | Dichlorodifluoromethane | 75718 | soil | 0.003 | C | mg/kg | ı | : | | Z | Pass |
| F 5-4 | Dichloronæthane | 75092 | soil | 0.025 | | mg/kg | 1 | ı | 8.50E+01 | С | Pass |
| F-3-8 | Dieldrin | 60571 | soil | 0.0065 | C | mg/kg | 1 | 1 | 4.00E-02 | С | Pass |
| * RBC adjusted | * RBC adjusted for non-carcinogenic additive effects. N = non-carcinogenic. | non carcinocania. | - | N | | | | 4 | | | No. |

arbitrarily set at 1E-6 for soil and water.

Page 6 of 14

Sample ID

Analyte

Matrix

Concentration Qual. Units

Adjusted Tap Water RBC

Pass Tier 1 Screen?

Adjusted Soil RBC (Residential)

Pass Tier I Screen?

| | 86306 soil 91203 soil 98953 soil 87865 soil 120127 soil | 86306 soil 0.329 91203 soil 0.329 98953 soil 0.329 87865 soil 0.329 120127 soil 3.2 | 86306 soil 0.329 U 91203 soil 0.329 U 98953 soil 0.329 U 87865 soil 0.329 U 120127 soil 3.2 | 86306 soil 0.329 U mg/kg 91203 soil 0.329 U mg/kg 98953 soil 0.329 U mg/kg 87865 soil 0.329 U mg/kg 120127 soil 3.2 mg/kg | 86306 soil 0.329 U mg/kg 91203 soil 0.329 U mg/kg 98953 soil 0.329 U mg/kg 87865 soil 0.329 U mg/kg 120127 soil 3.2 mg/kg | 86306 soil 0.329 U mg/kg 91203 soil 0.329 U mg/kg 98953 soil 0.329 U mg/kg 120127 soil 0.329 U mg/kg 108962 soil 0.320 U mg/kg | 86306 soil 0.329 U mg/kg 1.30E+02 91203 soil 0.329 U mg/kg 1.60E+02 98953 soil 0.329 U mg/kg 3.90E+00 87865 soil 0.329 U mg/kg 5.30E+00 120127 soil 3.2 mg/kg 2.30E+03 |
|------------------------------------|---|---|---|---|---|--|---|
| | soil soil soil soil soil | soil 0.329 soil 0.329 soil 0.329 soil 0.329 soil 3.2 soil 0.329 soil 3.4 soil 0.003 | soil 0.329 U soil 0.329 U soil 0.329 U soil 0.329 U soil 3.2 soil 0.329 U soil 0.329 U soil 0.003 U | soil 0.329 U mg/kg soil 0.329 U mg/kg soil 0.329 U mg/kg soil 0.329 U mg/kg soil 3.2 mg/kg soil 0.329 U mg/kg soil 3.4 mg/kg soil 0.003 U mg/kg | soil 0.329 U mg/kg soil 0.329 U mg/kg soil 0.329 U mg/kg soil 3.2 mg/kg soil 0.329 U mg/kg soil 0.329 U mg/kg soil 0.0329 U mg/kg soil 0.003 U mg/kg | soil 0.329 U mg/kg soil 0.329 U mg/kg soil 0.329 U mg/kg soil 3.2 mg/kg soil 0.329 U mg/kg soil 3.4 mg/kg soil 0.003 U mg/kg | soil 0.329 U mg/kg 1.30E+02 soil 0.329 U mg/kg 1.60E+02 soil 0.329 U mg/kg 3.90E+00 soil 0.329 U mg/kg 5.30E+00 soil 3.2 mg/kg 2.30E+03 soil 0.329 U mg/kg 4.70E+03 soil 3.4 mg/kg 2.30E+02 soil 0.003 U mg/kg 2.30E+02 |
| soil soil soil soil soil soil soil | | 0.329 0.329 0.329 0.329 0.329 3.2 0.0329 3.4 0.003 0.003 | 0.329 U 0.329 U 0.329 U 0.329 U 3.2 0.329 U 3.4 0.003 U 0.003 U 0.003 U | 1 0.329 U mg/kg 1 0.329 U mg/kg 1 0.329 U mg/kg 1 0.329 U mg/kg 3.2 mg/kg 0.329 U mg/kg 0.030 U mg/kg 0.003 U mg/kg 0.003 U mg/kg 0.003 U mg/kg | 1 0.329 U mg/kg 1 0.329 U mg/kg 1 0.329 U mg/kg 2 3.2 mg/kg 3.2 mg/kg 3.4 mg/kg 0.003 U mg/kg 0.003 U mg/kg 0.003 U mg/kg | 1 0.329 U mg/kg | 1 0.329 U mg/kg 1.60E+02 1 0.329 U mg/kg 1.60E+02 1 0.329 U mg/kg 5.30E+00 3.2 mg/kg 2.30E+00 3.2 mg/kg 4.70E+03 3.4 mg/kg 2.30E+02 0.003 U mg/kg 1.60E+03 0.003 U mg/kg 1.60E+03 0.003 U mg/kg 1.60E+03 |
| | 0.329 0.329 0.329 0.329 0.329 3.2 0.329 3.4 0.003 0.003 | | | U mg/kg | U mg/kg | U mg/kg | U mg/kg 1.30E+02 U mg/kg 1.60E+02 U mg/kg 3.90E+00 mg/kg 5.30E+00 mg/kg 2.30E+03 mg/kg 4.70E+03 U mg/kg 1.60E+03 U mg/kg 1.60E+03 U mg/kg 5.80E-01 |

arbitrarily set at 1E-6 for soil and water.

| ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | Adjusted Tap Water RBC | Screen? | (Residential) | | Pass Tier 1 Screen? |
|--------------------|--|--------|---|---------------|-------------|-------|------------------------|---------|---------------|--------|------------------------|
| soil | | | 17. 17. 17. 18. 19. 19. 19. 19. 19. 19. 19. 19. 19. 19 | | | | | | | | |
| Subsurface: | | | | | | | | | | | |
| Organics: FSS-8 | 1,2-Dibrono-3-chloropropane | 96128 | soil | 0 0035 | = | mo/ko | | | 4 600 01 |) | 3 |
| FSS-8 | 1,2-Dibronxethane | 106934 | soil | 0.0035 | _ | mg/kg | 1 | : | 7.50E-03 | 0 | Pass |
| FSS-4 | 1,2-Dichlorobenzene | 95501 | soil | 0.3205 | C | mg/kg | ı | : | 7.04E+02 | ż | Pass |
| FSS-8 | 1,2-Dichloroethane | 107062 | soil | 0.0035 | C | mg/kg | : | : | 7.00E+00 | C | Pass |
| FSS-8 | 1,2-Dichloropropane | 78875 | soil | 0.0035 | | mg/kg | Ī | í. | 9.40E+00 | C | Pass |
| FSS-4 | 1,3-Dichlorobenzene | 541731 | soil | 0.3205 | U | mg/kg | : | i. | 2.35E+02 | z | Pass |
| FSS-4 | 1,4-Dichlorobenzene | 106467 | soil | 0.3205 | \subset | mg/kg | : | r | 2.70E+01 | C | Pass |
| FSS-4 | 2,4,5-Trichlorophenol | 95954 | soil | 0.3205 | C | mg/kg | I | : | 7.80E+02 | * Z | Pass |
| FSS-4 | 2,4,6-Trichlorophenol | 88062 | soil | 0.3205 | \Box | mg/kg | ī | 1 | 5.80E+01 | C | Pass |
| FSS-4 | 2,4-Dichlorophenol | 120832 | soil | 0.3205 | U | mg/kg | 1 | 1 | 2.30E+01 | * Z | Pass |
| FSS-6 | 2,4-Dimethylphenol | 105679 | soil | 0.3205 | U | mg/kg | 1 | 1 | 1.60E+02 | * Z | Pass |
| FSS-6 | 2,4-Dinitrophenol | 51285 | soil | 0.3205 | U | mg/kg | 1 | 3 | | * Z | Pass |
| FSS-6 | 2,4-Dinitrotoluene | 121142 | soil | 0.3205 | C | mg/kg | | I | | ž | Pass |
| FSS-6 | 2,6-Dinitrotoluene | 606202 | soil | 0.3205 | U | mg/kg | ī | | | ž | Pass |
| FSS-8 | 2-Butanone | 78933 | soil | 0.017 | U | mg/kg | Ī | ŀ | | * Z | Pass |
| FSS-6 | 2-Chloronaphthalene | 91587 | soil | 0.3205 | U | mg/kg | ı | ı | 6.30E+02 | * Z | Pass |
| FSS-6 | 2-Chlorophenol | 95578 | soil | 0.3205 | C | mg/kg | 1 | : | | z | Pass |
| FSS-8 | 2-Hexanone | 591786 | soil | 0.017 | U | mg/kg | ı | b | 3.10E+02 | ž | Pass |
| FSS-4 | 2-Methylnaphthalene | 91576 | soil | 17 | | mg/kg | I | Í | 1.60E+02 | z | Pass |
| FSS-6 | 2-Methylphenol | 95487 | soil | 0.3205 | \Box | mg/kg | 1 | : | 3.90E+02 | ž | Pass |
| FSS-6 | 2-Nitroaniline | 88744 | soil | 0.3205 | C | mg/kg | 1 | : | | | |
| FSS-6 | 2-Nitrophenol | 100027 | soil | 0.3205 | U | mg/kg | ı | ı | 6.30E+01 | z | Pass |
| FSS-6 | 3,3'-Dichlorobenzidine | 91941 | soil | 0.3205 | \Box | mg/kg | : | : | 1.40E+00 | C | Pass |
| FSS-6 | 3-Nitroaniline | 88744 | soil | 0.3205 | | mg/kg | ; | ī | | | ? |
| FSS-4 | 4,4'-DDD | 72548 | soil | 0.067 | | mg/kg | 1 | Î | 2.70E+00 | С | Pass |
| FSS-4 | 4,4*DDE | 72559 | soil | 0.0065 | \subseteq | mg/kg | I | 1 | 1.90E+00 | С | Pass |
| FSS-4 | 4,4'-DDT | 50293 | soil | 0.0065 | C | mg/kg | 18 | Ē | 1.90E+00 | С | Pass |
| * RBC adjusted | • DDO Advised Communication and the state of | | | | | | | | | | |

arbitrarily set at 1E-6 for soil and water. NDC value exists for morganic mercury; the screening value was

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| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | Adjusted Tap Water RBC | Pass Tier 1 Screen? | Adjusted Soil RBC (Residential) | RBC al) | Pass Tier I Screen? |
|----------------|--|----------------|-----------------|--------------------|-------------|----------------|---------------------------|------------------------|------------------------------------|------------|------------------------|
| soil | | | | | | | | | | | |
| Subsurface: | | | | | | | | | | | |
| Organics: | | | | | | | | | | | |
| 100-0 | Caroon distilling | /5150 | 1105 | 0.0035 | | mg/kg | ı | Ē | 7.80E+02 | z | Pass |
| FSS-8 | Carbon tetrachloride | 56235 | soil | 0.0035 | U | mg/kg | : | ı | 4.90E+00 | С | Pass |
| FSS-6 | Chlordane | 57749 | soil | 0.032 | _ | mg/kg | ī | I , | 1.80E+00 | С | Pass |
| FSS-8 | Chlorobenzene | 108907 | soil | 0.0035 | U | mg/kg | I | : | 1.60E+02 | · Z | Pass |
| FSS-8 | Chloroethane | 75003 | soil | 0.0035 | C | mg/kg | Î | : | 2.20E+02 | С | Pass |
| FSS-8 | Chloroform | 67663 | soil | 0.0035 | U | mg/kg | 1 | 1 | 7.82E+01 | · Z | Pass |
| FSS-8 | Chloromethane | 74873 | soil | 0.0035 | C | mg/kg | 1 | 3 | 4.91E+01 | С | Pass |
| FSS-4 | Chrysene | 218019 | soil | 78 | | mg/kg | 1 | 1 | 8.80E+01 | С | Pass |
| FSS-7 | cis-1,2-Dichloroethene | 156592 | soil | 0.0035 | C | mg/kg | Ē | ı | 7.80E+01 | z Z | Pass |
| FSS-8 | cis-1,3-Dichloropropene | 542756 | soil | 0.0035 | \Box | mg/kg | Ī | r | 6.40E+00 | С | Pass |
| FSS-4 | d-BHC | 58899 | soil | 0.0065 | U | mg/kg | ı | Į. | 4.90E-01 | С | Pass |
| FSS-6 | Di-n-butyl phthalate | 84742 | soil | 0.3205 | | mg/kg | ı | ı | 7.80E+02 | * Z | Pass |
| FSS-6 | Di-n-octyl phthalate | 117840 | soil | 0.3205 | U | mg/kg | ı | 1 | 1.60E+02 | × | Pass |
| FSS-4 | Dibenz[a,h]anthracene | 53703 | soil | 8.8 | | mg/kg | 3 | 1 | 8.80E-02 | С | Fail |
| FSS-6 | Dibenzofuran | 132649 | soil | 0.3205 | U | mg/kg | 1 | 1 | 3.10E+01 | * Z | Pass |
| FSS-7 | Dibronochloronethane | 124481 | soil | 0.0035 | C | mg/kg | 1 | ; | 7.60E+00 | С | Pass |
| FSS-8 | Dichlorodifluoromethane | 75718 | soil | 0.0035 | U | mg/kg | E | 1 | 1.60E+03 | ž | Pass |
| FSS-8 | Dichloronethane | 75092 | soil | 0.053 | | mg/kg | 1 | 1 | 8.50E+01 | С | Pass |
| FSS-4 | Dieldrin | 60571 | soil | 0.015 | | mg/kg | 1 | 1 | 4.00E-02 | С | Pass |
| FSS-4 | Diethyl phthalate | 84662 | soil | 0.3205 | U | mg/kg | ľ | 1 | 6.30E+03 | ž | Pass |
| FSS-6 | Dinxethyl pluhalate | 131113 | soil | 0.3205 | \subseteq | mg/kg | : | 1 | 7.80E+04 | ž | Pass |
| FSS-4 | Endosulfan I | 115297 | soil | 0.0065 | | mg/kg | ľ | I. | 4.70E+01 | ż | Pass |
| FSS-4 | Endosulfan II | 115297 | soil | 0.034 | | mg/kg | I | Ĺ | 4.70E+01 | ž | Pass |
| FSS-4 | Endosulfan Sulfate | 115297 | soil | 0.011 | | mg/kg | 1 | 1 | 4.70E+01 | ż | Pass |
| FSS-4 | Endrin | 72208 | soil | 0.0065 | U | mg/kg | 1 | ı | 2.40E+00 | z | Pass |
| FSS-4 | Endrin Aldehyde | 72208 | soil | 0.017 | | mg/kg | - | ī | 2.40E+00 | z | Pass |
| FSS-4 | Endrin Ketone | 72208 | soil | 0.0065 | U | mg/kg | 1 | 1 | 2.40E+00 | ż | Pass |
| * RBC adjusted | * RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury: the screening value was | arcinogenic; C | = carcinogenic. | Note: no RBC value | e exists f | or inorganic m | ercury the screening | value was | | D | B 13 -617 |

arbitrarily set at 1E-6 for soil and water.

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| Sample ID | Analyte | CAS | Matrix | Concentration Qual. Units | Qual. | Units | Adjusted Tap Water RBC | Pass Tier I Screen:? | Pass Tier 1 Adjusted Soil RBC Pass Tier 1 Screen:? (Residential) Screen? | RC Pass Tier I Screen? |
|--------------|---------------------------|----------|--------|---------------------------|--------|--------|---------------------------|-------------------------|--|---------------------------|
| soil | | | | | | | | | | |
| Subsurface: | | | | | | | | | | |
| Organics: | | | | | | | | | | |
| FSS-7 | Tetrachloroethene | 127184 | soil | 0.0035 | ⊂ | nig/kg | : | ; | 1.20E+01 | C Pass |
| FSS-4 | Toluene | 108883 | soil | 0.051 | | mg/kg | 1 | l | 1.60E+03 * | * N Pass |
| FSS-4 | Toxaphene | 8001352 | soil | 0.032 | \Box | mg/kg | ; | 1 | 5.80E-01 | C Pass |
| FSS-7 | trans-1,2-Dichloroethene | 156605 | soil | 0.0035 | \Box | mg/kg | 1 | | 1.60E+02 • | • N Pass |
| FSS-8 | trans-1,3-Dichloropropene | 542756 | soil | 0.0035 | U | mg/kg | 1 | : | 6.40E+00 | C Pass |
| FSS-7 | Trichloroethene | 79016 | soil | 0.0035 | П | mg/kg | 3 | | 1.60E+00 | C Pass |
| FSS-7 | Trichlorofluoronethane | 75694 | soil | 0.0035 | U | mg/kg | 1 | • | 2.30E+03 * | • N Pass |
| FSS-7 | Vinyl chloride | 75014 | soil | 0.0035 | □ | mg/kg | 3 | ı | 9.00E-02 | C Pass |
| FSS-4 | Xylene, Total | (1330207 | soil | 0.1 | | mg/kg | 1 | ı | 1.60E+04 * | • N Pass |
| | | | | | | | | | | |

[•] RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

Sample ID

Analyte

CAS

Matrix

Concentration Qual.

Units

Standard

Screen?

MDE Groundwater Pass Tier I

MDE Soil Standard (Non-Residential)

Pass Tier I Screen?

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| MW-2 | MW-2 | MW-2 | MW-2 | MW-I | MW-1 | MW-1 | I-WM | MW-1 | MW-1 | MW-I | MW-1 | MW-2 | MW-2 | I-WM | MW-1 | MW-1 | I-WM | MW-I | MW-I | I-WM | I-WM | MW-1 | I-WW | Organics: | Water: Groundwater |
|-----------------|----------------|------------------------|-----------------|---------------------------|--------------------------|----------|-------------------|----------|-------------------|----------------------|----------------|------------------|--------------|-----------------|-------------------------|----------------------|-------------------------|------------------------|---------------|------------|--------------|---------------|----------------------|-----------|--------------------|
| . Xylene, Total | Vinyl chloride | Trichlorofluoronæthane | Trichloroethene | trans-1,3-Dichloropropene | trans-1,2-Dichloroethene | Toluene | Tetrachloroethene | Styrene | Methylcyclohexane | Methyl-t-butyl ether | Methyl Acetate | Isopropylbenzene | Ethylbenzene | Dichloromethane | Dichlorodifluoronæthane | Dibronochloromethane | cis-1,3-Dichloropropene | cis-1,2-Dichloroethene | Chloromethane | Chloroform | Chloroethane | Chlorobenzene | Carbon tetrachloride | | undwater |
| 1330207 | 75014 | | 79016 | 542756 | 156605 | 108883 | 127184 | 100425 | | 1634044 | | 98828 | 100414 | 75092 | | 124481 | 542756 | 156592 | 74873 | 67663 | 75003 | 108907 | 56235 | | |
| water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | water | | |
| 7400 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 3100 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 260 | 5700 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | | |
| 22 | U | U | | ⊂ | ⊂ | | | C | \subseteq | \Box | \Box | | | \cup | U | C | C | | C | □ | C | U | U | | |
| ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/I | ug/l | ug/I | ug/I | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/l | ug/I | ug/l | ug/l | | |
| 1.00E+04 | 2.00E+00 | | 5.00E+00 | 1.00E+00 | 1.00E+02 | 1.00E+03 | 5.00E+00 | 1.00E+02 | | 2.00E+01 | | 6.60E+01 | 7.00E+02 | 5.00E+00 | | 8.00E+01 | 1.00E+00 | 7.00E+01 | 2.10E+00 | 8.00E+01 | 3.60E+00 | 1.00E+02 | 5.00E+00 | | |
| Pass | Pass | ? | Pass | Pass | Pass | Fail | Pass | Pass | .9 | Pass | ? | Fail | Fail | Pass | .9 | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | | |
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[•] RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | MDE Groundwater Standard | Pass Tier I Screen? | MDE Soil Standard (Non-Residential) | Pass Tier 1 Screen? |
|--------------|--|--------|--------|---------------|----------|-------|-----------------------------|------------------------|--|------------------------|
| <u>soil</u> | | | | | | | | | | |
| Surface: | | | | | | | | | | |
| Organics: | | | | | | | | | | |
| FS-6 | 1,1,1,2-Tetrachloroethane | | soil | 0.003 | C | mg/kg | ı | I. | | 9 |
| FS-6 | 1,1,1-Trichloroethane | 71556 | soil | 0.003 | C | mg/kg | I | : | 5.70F+04 | Pace . |
| FS-6 | 1.1,2,2-Tetrachloroethane | 79345 | soil | 0.003 | C | mg/kg | : | | 2.90F+01 | Pace |
| FS-6 | 1,1,2-Trichloroethane | 79005 | soil | 0.003 | C | mg/kg | : | : | 1 00E+02 | Pace |
| FS-6 | 1,1-Dichloroethane | 75343 | soil | 0.003 | C | mg/kg | • | : | 2 00 0 + 0 4 | Page |
| FS-6 | 1,1-Dichloroethene | 75354 | soil | 0.003 | C | mg/kg | ı | 1 | 9 S0E+00 | Pace |
| FS-6 | 1,2,3-Trichlorobenzene | 120821 | soil | 0.003 | C | mg/kg | : | | 2 00E+03 | Dage |
| FS-8 | 1,2,4-Trichlorobenzene | 120821 | soil | 0.329 | | mg/kg | 1 | ı | 2.00E+03 | Pacc |
| FS-6 | 1,2-Dibrono-3-chloropropane | 96128 | soil | 0.003 | □ | mg/kg | 1 | ı | 4.10E+00 | Pass |
| FS-6 | 1,2-Dibromoethane | 106934 | soil | 0.003 | U | mg/kg | ; | 1 | 6.70E-02 | Pass |
| FS-8 | 1,2-Dichlorobenzene | 95501 | soil | 0.329 | U | mg/kg | 1 | ı | 1.80E+04 | Pass |
| FS-6 | 1,2-Dichloroethane | 107062 | soil | 0.003 | □ | mg/kg | r. | : | 6.30E+01 | Pass |
| FS-6 | 1,2-Dichloropropane | 78875 | soil | 0.003 | | mg/kg | ı | Ē | 8.40E+01 | Pass |
| FS-8 | 1,3-Dichlorobenzene | 541731 | soil | 0.329 | U | mg/kg | 1 | ı | 6.10E+03 | Pass |
| FS-8 | 1,4-Dichlorobenzene | 106467 | soil | 0.329 | | mg/kg | ı | : | 2.40E+02 | Pass |
| FS-8 | 2,4,5-Trichlorophenol | 95954 | soil | 0.329 | _ | mg/kg | 3 | 1 | 2.00E+04 | Pass |
| FS-8 | 2,4,6-Trichlorophenol | 88062 | soil | 0.329 | □ | mg/kg | ı | 1 | 5.20E+02 | Pass |
| FS-8 | 2,4-Dichlorophenol | 120832 | soil | 0.329 | □ | mg/kg | 1 | 1 | 6.10E+02 | Pass |
| FS-8 | 2,4-Dinethylphenol | 105679 | soil | 0.329 | U | mg/kg | 1 | 1 | 4.10E+03 | Pass |
| FS-8 | 2,4-Dinitrophenol | 51285 | soil | 0.329 | C | mg/kg | S. | : | 4.10E+02 | Pass |
| FS-8 | 2,4-Dinitrotoluene | 121142 | soil | 0.329 | | mg/kg | 1 | : | 4.10E+02 | Pass |
| FS-8 | 2,6-Dinitrotoluene | 606202 | soil | 0.329 | U | mg/kg | : | : | 2.00E+02 | Pass |
| FS-2 | 2-Butanone | 78933 | soil | 0.016 | U | mg/kg | ı | 1 | 1.20E+05 | Pass |
| FS-8 | 2-Chloronaphthalene | 91587 | soil | 0.329 | U | mg/kg | ı | f. | 1.60E+04 | Pass |
| FS-8 | 2-Chlorophenol | 95578 | soil | 0.329 | | mg/kg | ï | ŗ | 1.00E+03 | Pass |
| FS-2 | 2-Hexanone | 591786 | soil | 0.016 | U | mg/kg | 1 | ī | 8.20E+03 | Pass |
| FS-8 | 2-Methylnaphthalene | 91576 | soil | 0.329 | U | mg/kg | 0 | 1 | 4.10E+03 | Pass |
| RBC adjusted | * RBC adjusted for non-carcinogenic additive officies. N = non-carcinogenic. | | | | | | | | | |

^{*}RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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Attachm A (cont.). Identification of Chemicals of Concern (Non-Residential Use): Frederick Site I, Frederick, Maryland; PCA Co 65586

| Sample ID | Analyte | CAS | Matrix | Concentration Qual. | Qual. | Units | MDE Groundwater Standard | Pass Tier I Screen? | MDE Soil Standard (Non-Residential) | Pass Tier 1 Screen? |
|--------------------|------------------------------|--------|--|---------------------|-------------|-------|-----------------------------|------------------------|--|------------------------|
| <u>soil</u> | | | 17-11-11-11-11-11-11-11-11-11-11-11-11-1 | | | | | | | |
| Surface: Organics: | | | | | | | | | | |
| FS-8 | Benzyl butyl phthalate | | soil | 0.329 | C | mg/kg | 1 | : | | 3 |
| FS-8 | Bis(2-chloroisopropyl)ether | 108601 | soil | 0.329 | C | mg/kg | ; | : | 8 20E+01 | Dage . |
| FS-8 | Bis-(2-chloroethyl)ether | 111444 | soil | 0.329 | C | mg/kg | : | | \$ 205+00 | Paga |
| FS-8 | Bis·(2-ethylhexyl)-pluhalate | 117817 | soil | 0.329 | □ | mg/kg | ı | . 3 | 4 105-00 | Pass |
| FS-4 | Bronodichloronethane | 75274 | soil | 0.003 | _ | me/ke | : | 1 | 0.705+01 | Pass |
| FS-4 | Вголюбогт | 75252 | soil | 0.003 | C | mg/kg | ı | : | 7 20E+02 | Page |
| FS-4 | Bronxonxthane | 74839 | soil | 0.003 | U | mg/kg | Ď | ı | 2.90F+02 | Pace |
| FS-8 | Carbazole | 86748 | soil | 0.329 | C | mg/kg | 1 | : | 2.90E+02 | Pass |
| FS-4 | Carbon disulfide | 75150 | soil | 0.003 | U | mg/kg | | : | 2.00E+04 | Pass |
| FS-4 | Carbon tetrachloride | 56235 | soil | 0.003 | | mg/kg | ı | Ē | 4.40E+01 | Pass |
| FS-8 | Chlordane | 57749 | soil | 0.033 | П | mg/kg | ī | 1 | 1.60E+01 | Pass |
| FS-4 | Chlorobenzene | 108907 | soil | 0.003 | | mg/kg | 1 | : | 4.10E+03 | Pass |
| FS-2 | Chloroethane | 75003 | soil | 0.003 | \subset | mg/kg | : | : | 2.00E+03 | Pass |
| T 13 | Chlorotorm | 67663 | soil | 0.003 | C | mg/kg | | : | 9.40E+02 | Pass |
| EC 0 | Choronethane | 74873 | soil | 0.003 | \subseteq | mg/kg | : | : | 4.40E+02 | Pass |
| F. 2-6 | cis 1.2 Dichlorothers | 218019 | soil | 8.1 | | mg/kg | ı | 1 | 7.80E+02 | Pass |
| FS-2 | cis-1 3. Dichloropropaga | 126292 | soil | 0.003 | C | mg/kg | ı | 1 | 2.00E+03 | Pass |
| FS_7 | d-Bill | 342736 | Soil | 0.003 | U | mg/kg | ı | 1 | 5.70E+01 | Pass |
| FC.8 | Din build shipsing | 58899 | soil | 0.0065 | U | mg/kg | 1 | ľ | 4.40E+00 | Pass |
| FS.7 | Dimontol whiteless | 84/42 | soil | 0.329 | _ | mg/kg | ï | ı | 2.00E+04 | Pass |
| FS-7 | Dibarda blanksons | 11/840 | soil | 0.329 | U | mg/kg | ı | ŧ | 4.10E+03 | Pass |
| E 27 | Dibenz[a,n]anuracene | 53703 | soil | 0.329 | U | mg/kg | ï | ŀ | 7.80E-01 | Pass |
| F5 - / | Dibenzoluran | 132649 | soil | 0.329 | U | mg/kg | ī | ı | 8.20E+02 | Pass |
| 7 | Dioromochioromethane | 124481 | soil | 0.003 | U | mg/kg | 1 | 1 | 6.80E+01 | Pass |
| 1 2 | Dichlorodilluoronæthane | | soil | 0.003 | C | mg/kg | t | 1 | | ? |
| FS.4 | Dichloromethane | 75092 | soil | 0.025 | | mg/kg | ı | : | 7.60E+02 | Pass |
| | DEMIN | 60571 | soil | 0.0065 | U | mg/kg | : | : | 3.60E-01 | Pass |
| | | | | | | | | | | |

[•] RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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| Sample ID | Analyte | CAS | Matrix | Concentration | Qual. | Units | MDE Groundwater Standard | Pass Tier 1 Screen? | MDE Soil Standard (Non-Residential) | Pass Tier I Screen? |
|-----------------------|-------------------------------------|---------|--------|---------------|-------------|-------|-----------------------------|------------------------|-------------------------------------|------------------------|
| <u>soil</u> | | | | | | | | 10 | | |
| Surface: Organics: | | | | | | | | | | |
| FS-8 | N-Nitrosodiphenylamine | 86306 | soil | 0.329 | \subseteq | mg/kg | 1 | 1 | 1.20E+03 | Pass |
| FS-8 | Naphthalene | 91203 | soil | 0.329 | П | mg/kg | 1 | 1 | 4.10E+03 | Pass |
| FS-8 | Nitrobenzene | 98953 | soil | 0.329 | U | mg/kg | ı | ı | 1.00E+02 | Pass |
| FS-7 | Pentachlorophenol | 87865 | soil | 0.329 | _ | mg/kg | ı | : | 4.80E+01 | Pass |
| FS-8 | Phenanthrene | 120127 | soil | 3.2 | | mg/kg | Ē | ı | 6.10E+04 | Pass |
| FS-7 | Phenol | 108952 | soil | 0.329 | \subset | mg/kg | ï | ľ | 1.20E+05 | Pass |
| FS-8 | Рутепе | 129000 | soil | 3.4 | | mg/kg | Î | : | 6.10E+03 | Pass |
| FS-4 | Styrene | 100425 | soil | 0.003 | U | mg/kg | ī | ı | 4.10E+04 | Pass |
| FS-4 | Tetrachloroethene | 127184 | soil | 0.003 | C | mg/kg | 1 | : | 1.10E+02 | Pass |
| FS-4 | Toluene | 108883 | soil | 0.003 | \Box | mg/kg | 1 | 1 | 4.10E+04 | Pass |
| FS-8 | Toxaphene | 8001352 | soil | 0.033 | \subset | mg/kg | | ; | 5.20E+00 | Pass |
| FS-4 | trans-1,2-Dichloroethene | 156605 | soil | 0.003 | | mg/kg | 1 | ; | 4.10E+03 | Pass |
| FS-4 | trans-1,3-Dichloropropene | 542756 | soil | 0.003 | \subset | mg/kg | f | ; | 5.70E+01 | Pass |
| FS-4 | Trichloroethene | 79016 | soil | 0.003 | \subset | mg/kg | r | ř | 5.20E+02 | Pass |
| FS-4 | Trichlorofluoronæthane | | soil | 0.003 | \subset | mg/kg | f | ı | | ? |
| FS-4 | Vinyl chloride | 75014 | soil | 0.003 | \subset | mg/kg | ı | ī | 7.90E+00 | Pass |
| FS-4 | Xylene, Total | 1330207 | soil | 0.003 | \subseteq | mg/kg | ı | ı | 4.10E+05 | Pass |
| Subsurface: | | | | | | | | | | |
| FSS-8 1,1,2-Trichlo-1 | 1,1,2-Trichlo-1,2,2-trifluoroethane | | soil | 0.0035 | = | mo/bo | | | | a.; |
| FSS-4 | 4-Bromophenyl phenyl ether | | soil | 0.3205 | C | mg/kg | 1 | | | . 9 |
| FSS-6 | 4-Chloro-3-nethylphenol | | soil | 0.3205 | \Box | mg/kg | | 1 | | ? |
| FSS-4 | 4-Chlorophenyl phenyl ether | | soil | 0.3205 | U | mg/kg | ŧ | 1 | | ? |
| FSS-4 | Bis-(2-chloroethoxy)nethane | | soil | 0.3205 | \subseteq | mg/kg | ı | E | | ٠,٥ |
| FSS-7 | Bromochloromethane | | soil | 0.0035 | C | mg/kg | 1 | : | | ,9 |
| FSS-7 | Cyclohexane | | soil | 0.0035 | \subseteq | mg/kg | 1 | 1 | | ? |
| FSS-6 | Diesel Range Organics by GC/FID | | soil | 1500 | | mg/kg | 1 | ; | | ? |

[•] RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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| Pass | 1.70E+01 | | | | | | , | | * PRC adjusted for non-propring addition (Posts, N) | • BBC adimend |
|------------------------|-------------------------------------|------------------------|------------------------------|-------|-----------|---------------|--------|--------|---|---------------|
| ; | | | | ma/ba | Ξ | 0 0065 | SOI | 50293 | 4,4'-DDT | FSS-4 |
| Pass | 1.70E+01 | ı | ı | mg/kg | | 0.0065 | soil | 72559 | 4,4'-DDE | FSS-4 |
| Pass | 2.40E+01 | ř | E | mg/kg | | 0.067 | soil | 72548 | 4,4'-DDD | FSS-4 |
| د٠ | | 1 | : | mg/kg | \Box | 0.3205 | soil | 88744 | 3-Nitroaniline | FSS-4 |
| Pass | 1.30E+01 | : | 1 | mg/kg | U | 0.3205 | soil | 91941 | 3,3'-Dichlorobenzidine | FSS-4 |
| Pass | 1.60E+03 | 1 | ű | mg/kg | U | 0.3205 | soil | 100027 | 2-Nitrophenol | FSS-4 |
| . , | | ı | ĭ | mg/kg | U | 0.3205 | soil | 88744 | 2-Nitroaniline | FSS-4 |
| Pass | 1.00E+04 | ; | ī | mg/kg | | 0.3205 | soil | 95487 | 2-Methylphenol | FSS-4 |
| Pass | 4.10E+03 | ; | ï | mg/kg | | 17 | soil | 91576 | 2-Methylnaphthalene | FSS-4 |
| Pass | 8.20E+03 | : | Ĩ | mg/kg | | 0.017 | soil | 591786 | 2-Hexanone | FSS-8 |
| Pass | 1.00E+03 | : | ī | mg/kg | | 0.3205 | soil | 95578 | 2-Chlorophenol | FSS-4 |
| Pass | 1.60E+04 | : | 1 | mg/kg | U | 0.3205 | soil | 91587 | 2-Chloronaphthalene | FSS-4 |
| Pass | 1.20E+05 | £ | ı | mg/kg | П | 0.017 | soil | 78933 | 2-Butanone | FSS-8 |
| Pass | 2.00E+02 | ı | : | mg/kg | | 0.3205 | soil | 606202 | 2,6-Dinitrotoluene | FSS-4 |
| Pass | 4.10E+02 | 1 | ľ | mg/kg | C | 0.3205 | soil | 121142 | 2,4-Dinitrotoluene | FSS-4 |
| Pass | 4.10E+02 | ; | : | mg/kg | C | 0.3205 | soil | 51285 | 2,4-Dinitrophenol | FSS-4 |
| Pass | 4.10E+03 | ; | ; | mg/kg | \subset | 0.3205 | soil | 105679 | 2,4-Dinethylphenol | FSS-4 |
| Pass | 6.10E+02 | 1 | 1 | mg/kg | | 0.3205 | soil | 120832 | 2,4-Dichlorophenol | FSS-4 |
| Pass | 5.20E+02 | : | 1 | mg/kg | \Box | 0.3205 | soil | 88062 | 2,4,6-Trichlorophenol | FSS-4 |
| Pass | 2.00E+04 | ı | I | mg/kg | П | 0.3205 | soil | 95954 | 2,4,5-Trichlorophenol | FSS-4 |
| Pass | 2.40E+02 | : | 1 | mg/kg | | 0.3205 | soil | 106467 | 1,4-Dichlorobenzene | FSS-4 |
| Pass | 6.10E+03 | 1 | ı | mg/kg | C | 0.3205 | soil | 541731 | 1,3-Dichlorobenzene | FSS-4 |
| Pass | 8.40E+01 | ľ | ı | mg/kg | | 0.0035 | soil | 78875 | 1,2-Dichloropropane | FSS-7 |
| Pass | 6.30E+01 | : | £ | mg/kg | _ | 0.0035 | soil | 107062 | 1,2-Dichloroethane | FSS-7 |
| Pass | 1.80E+04 | E | E | mg/kg | C | 0.3205 | soil | 95501 | 1,2-Dichlorobenzene | FSS-4 |
| Pass | 6.70E-02 | 1 | 1 | mg/kg | □ | 0.0035 | soil | 106934 | 1,2-Dibromoethane | FSS-7 |
| Pass | 4.10E+00 | • | T | mg/kg | □ | 0.0035 | soil | 96128 | 1,2-Dibronx-3-chloropropane | FSS-7 |
| | | | | | | | | | | Organics: |
| | | * | | | | | | | | Cuksunfaan |
| | | | | | | | | | | <u>soil</u> |
| Pass Tier 1 Screen? | MDE Soil Standard (Non-Residential) | Pass Tier 1 Screen? | MDE Groundsvater Standard | Units | Qual. | Concentration | Matrix | CAS | Analyte | Sample ID |

^{*} RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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| ID | Sample |
|-------------------|-------------------|
| Analyte | |
| CAS | ı |
| Matrix | |
| Concentration | |
| Qual. | |
| Units | |
| Standard | MDE Groundwater |
| Screen? | Pass Tier I |
| (Non-Residential) | MDE Soil Standard |
| Screen? | Pass Tier I |

| | ~ |
|----|---|
| | - |
| | • |
| н | - |
| -1 | |
| | |

Subsurface: Organics:

| | | | | | | | | | | | | | | | | | | | | | | | | | | (| 018 |
|---------------|-----------------|----------|--------------------|---------------|--------------|---------------------|-------------------|----------|-----------------|-------------------------|----------------------|--------------|-----------------------|----------------------|----------------------|----------|-------------------------|------------------------|----------|---------------|------------|--------------|---------------|-----------|----------------------|------------------|-----------|
| FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-8 | FSS-7 | FSS-7 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-4 | FSS-7 | FSS-7 | FSS-4 | FSS-7 | FSS-7 | FSS-7 | FSS-7 | FSS-4 | FSS-7 | FSS-7 | Organics: |
| Endrin Ketone | Endrin Aldehyde | Endrin | Endosulfan Sulfate | Endosulfan II | Endosulfan I | Diniethyl phthalate | Diethyl phthalate | Dieldrin | Dichloromethane | Dichlorodifluoronæthane | Dibronochloromethane | Dibenzofuran | Dibenz[a,h]anthracene | Di-n-octyl phthalate | Di-n-butyl phthalate | d-BHC | cis-1,3-Dichloropropene | cis-1,2-Dichloroethene | Chrysene | Chloromethane | Chloroform | Chloroethane | Chlorobenzene | Chlordane | Carbon tetrachloride | Carbon disulfide | |
| 72208 | 72208 | 72208 | 115297 | 115297 | 115297 | 131113 | 84662 | 60571 | 75092 | | 124481 | 132649 | 53703 | 117840 | 84742 | 58899 | 542756 | 156592 | 218019 | 74873 | 67663 | 75003 | 108907 | 57749 | 56235 | 75150 | |
| soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | soil | |
| 0.0065 | 0.017 | 0.0065 | 0.011 | 0.034 | 0.0065 | 0.3205 | 0.3205 | 0.015 | 0.053 | 0.0035 | 0.0035 | 0.3205 | 8.8 | 0.3205 | 0.3205 | 0.0065 | 0.0035 | 0.0035 | 78 | 0.0035 | 0.0035 | 0.0035 | 0.0035 | 0.032 | 0.0035 | 0.0035 | |
| С | | C | | | | U | | | | U | П | C | | U | □ | C | C | U | | \subset | | | C | \subset | | C | |
| mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | |
| 1 | i | 1 | 1 | 1 | 1 | : | 3 | 1 | | 1 | ; | 3 | 1 | Ī | ı | ı | ř | 1 | 1 | 1 | 1 | 1 | 1 | ı | ī | 1 | |
| : | ì | ī | ı | ; | 1 | | 1 | 1 | 1 | ; | ; | 1 | 1 | I | t | I | 1 | 1 | 1 | ; | 1 | : | 1 | 1 | 1 | . • | |
| 6.10E+01 | 6.10E+01 | 6.10E+01 | 1.20E+03 | 1.20E+03 | 1.20E+03 | 2.00E+06 | 1.60E+05 | 3.60E-01 | 7.60E+02 | | 6.80E+01 | 8.20E+02 | 7.80E-01 | 4.10E+03 | 2.00E+04 | 4.40E+00 | 5.70E+01 | 2.00E+03 | 7.80E+02 | 4.40E+02 | 9.40E+02 | 2.00E+03 | 4.10E+03 | 1.60E+01 | , 4.40E+01 | 2.00E+04 | |
| Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | ? | Pass | Pass | Fail | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | Pass | |

^{*} RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

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| Sample ID An | soil | Subsurface: | Organics: | FSS-7 Tetrachloroethene | FSS-4 Toluene | FSS-6 Toxapliene | FSS-1 trans-1,2-Dichloroethene | | | | FSS-7 Vinyl chloride | Ayiele, total |
|--|------|-------------|-----------|-------------------------|---------------|------------------|--------------------------------|-----------|----------|--------|----------------------|---------------|
| Analyte CAS | | | | 127184 | 108883 | 8001352 | 156605 | ne 542756 | 79016 | | 75014 | 1330207 |
| Matrix | | | | soil | soil | 2 soil | soil | soil | soil | soil | soil | soil |
| Concentration Qual. Units | | | | 0.0035 | 0.051 | 0.032 | 0.0035 | 0.0035 | 0.0035 | 0.0035 | 0.0035 | 0.1 |
| Qual. | | | | U | | U | | U | C | U | U | |
| Units | | | | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg | mg/kg |
| MDE Groundwater Standard | | | | I | 1 | ı | : | 3 | : | ; | ı | 1 |
| Pass Tier I Screen? | | | | : | 1 | : | i | ı | 1 | : | | 1 |
| MDE Groundwater Pass Tier 1 MDE Soil Standard Pass Tier 1 Standard Screen? (Non-Residential) Screen? | | | | 106+00 | 4.10E+04 | 5.20E+00 | 4.10E+03 | 5.70E+01 | 5.20E+02 | | 7.90E+00 | 4.10E+05 |
| Pass Tier 1 Screen? | | | | D | Pace | Pacc | Pacc | Pass | Pass | 2 | Pacc | Pass |

^{*} RBC adjusted for non-carcinogenic additive effects; N = non-carcinogenic; C = carcinogenic. Note: no RBC value exists for inorganic mercury; the screening value was arbitrarily set at 1E-6 for soil and water.

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

MORE + Chemical CAS No. (numbers only, no dashes) ENTER
Depth
below grade
to bottom
of enclosed
space floor,
L_f (15 or 200 cm) 78875 ENTER 200 Depth
below grade
to water table,
Lwr
(cm) ENTER
Initial
groundwater
conc.,
Cw
(µg/L) 4.90E+00 ENTER 671 YES SCS soil type directly above water table ENTER 1,2-Dichloropropane Average soil/ groundwater temperature, T_s (°C) ENTER 13.9

| П | | + |
|------|--|---|
| SIC | ENTER Vadose zone SCS Soil type (used to estimate soil vapor permeability) | |
| | O _R | |
| | ENTER User-defined vadose zone soil vapor permeability, (cm²) | |
| 1.5 | ENTER Vadose zone soil dry bulk density, Pb (g/cm³) | |
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) | |
| 0.3 | ENTER Vadose zone soil water-filled porosity, 0," (cm³/cm³) | |

| | | T_ |
|-----------------|---------|---|
| | | MORE → R |
| Used to calcul | 1.0E-06 | ENTER Target risk for carcinogens, TR TR (unitless) |
| late risk-based | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| 8 | _ | п |

groundwater concentration.

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

ENTER ENTER

CAS No.

(numbers only, Cw
no dashes)

ENTER

| | 7550 | MORE + | |
|------|--|----------------------|-------|
| 200 | to bottom of enclosed space floor, L _r (15 or 200 cm) | Depth below grade | ENTER |
| 671 | Depth below grade to water table, Lwr (cm) | | ENTER |
| SIC | SCS soil type directly above water table | | ENTER |
| 13.9 | soil/ groundwater temperature, T _s (°C) | Average | ENTER |

| (g/cm³) |
|------------------------|
| permeability, bulk der |
| |
| |
| |
| ENTER |

| | | € R |
|------------------------------|---------|---|
| Used to calcu | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Jsed to calculate risk-based | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| | | H |

groundwater concentration.

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below)

YES X

ENTER ENTER
Initial
Chemical groundwater

MORE **→** Depth
below grade
to bottom
of enclosed
space floor,
Lr
(15 or 200 cm) Chemical CAS No. (numbers only, no dashes) 100414 200 Depth
below grade
to water table,
Lwr
(cm) groundwater conc., C_w (µg/L) 5.70E+03 ENTER 671 soil type directly above water table ENTER SIC Ethylbenzene Chemical groundwater temperature, T_s (°C) Average soil/ ENTER 13.9

| | | ← |
|------|--|----------|
| SIC | ENTER Vadose zone SCS Soil type (used to estimate soil vapor permeability) | |
| | OR | |
| | ENTER User-defined vadose zone soil vapor permeability, k, (cm²) | |
| 1.5 | ENTER Vadose zone soil dry bulk density, P P (g/cm³) | |
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) | |
| 0.3 | ENTER Vadose zone soil water-filled porosity, 0, (cm³/cm³) | |

| | | " | MORE + |
|---|---------|---|--------|
| Used to calcu groundwater | 1.0E-06 | Target risk for carcinogens, TR (unitless) | ENTER |
| Used to calculate risk-based groundwater concentration. | - | Target hazard quotient for noncarcinogens, THQ (unitless) | ENTER |
| | 70 | 8 , | ENTER |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) | ENTER |
| | 25 | | ENTER |
| | 250 | Exposure frequency, EF (days/yr) | ENTER |

DATA ENTRY SHEET

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

| | C _w | |
|--|--|---|
| | conc., | (numbers only, |
| | | CAS No. |
| | groundwater | Chemical |
| | Initial | |
| | ENTER | ENTER |
| × | YES | |
| CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION (enter "X" in "YES" box and initial groundwater conc. below) | CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDW (enter "X" in "YES" box and initial groundwater conc. below) | CALCULATE INCREM (enter "X" in "YES" b |
| OR | | |
| | YES | |

| | | MORE . |
|------|--|--------------------------------|
| 200 | to bottom of enclosed space floor, Lr (15 or 200 cm) | 108883 ENTER Depth below grade |
| 671 | Depth below grade to water table, Lwr (cm) | 3.10E+03 ENTER |
| SIC | SCS soil type directly above water table | ENTER |
| 13.9 | groundwater temperature, T _s (°C) | Toluene ENTER |

| SIC | Vadose zone SCS Soil type (used to estimate soil vapor permeability) |
|------|--|
| | OR |
| | User-defined vadose zone soil vapor permeability, k, (cm²) |
| 1.5 | ENTER Vadose zone soil dry bulk density, Pb (g/cm³) |
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| 0.3 | ENTER Vadose zone soil water-filled porosity, 0, (cm³/cm³) |

| | П | 1 |
|---|---------|--|
| Used to calculate risk-base groundwater concentration | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based groundwater concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |
| | 70 | ENTER Averaging time for carcinogens, ATc (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{isc} (yrs) |
| | 25 | ENTER Exposure duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES

OR

OR

VERMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X"

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, C_R
no dashes) (µg/kg) Chen

7439976

1.50E+03

Mercury (elemental)

BOTER ENTER ENTER ENTER

| Language | La

15

13.9

| | MORE - |
|-------|--|
| 1.5 | ENTER Vadose zone soil dry bulk density, Pb (g/cm³) |
| 0.43 | Vadose zone soil total porosity, n v (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, 0 v (cm³/cm³) |
| 0.002 | ENTER Vadose zone soil organic carbon fraction, f c (unitless) |

| END | | MORE → |
|---|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

Cartine -

1 of 1

| ē | YFC | CALCULATE RISK-BASED SOIL CO |
|---|--------------------|--------------------------------------|
| | | NCENTRATION (enter "X" in "YES" box) |
| | Version 2.3; 03/01 | SL-SCREEN |

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| 3m31 Cilcinical | | |
|-----------------|----------|-------------|
| | | |
| | | no dashes) |
| \$ | | (numbers on |
| onc., | | CAS No. |
| soil | | Chemical |
| nitial | | |
| ENTER | EN | ENTER |
| | | |
| YES X | Y | |

| | + | MORE |
|------|--|-------|
| 15 | below grade to bottom of enclosed space floor, L, (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, L (cm) | ENTER |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | O _R | |
| | User-define vadose zon soil vapor permeability k, (cm²) | ENTER |

| П | MORE! | MORE □ |
|---------|---|--|
| 70 | ENTER Averaging time for carcinogens, AT _c (yrs) | ENTER Vadose zone soil dry bulk density, Ph (g/cm³) |
| 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | Vadose zone soil total porosity, n v (unitless) |
| 25 | ENTER Exposure duration, ED (yrs) | ENTER Vadose zone soil water-filled porosity, 0, (cm³/cm³) |
| 250 | EXPOSUTE frequency, EF (days/yr) | Vadose zone soil organic carbon fraction, fee vulnitless) |
| 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | |
| 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | |
| | ns, | |

END

Used to calculate risk-based soil concentration.

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES SL-SCREEN Version 2.3; 03/01

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) YES

| Benzo(a)nyrene | 1.00E+02 | 50328 |
|----------------|----------|----------------|
| | | |
| Chemical | (µg/kg) | no dashes) |
| | ጌ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

| | | SIC | 13.9 | 15 | 15 | |
|---|----|--|---|--|--|-------|
| vadose zone soil vapor permeability, k, (cm²) | OR | SCS soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L _t (cm) | to bottom of enclosed space floor, L _f (15 or 200 cm) | |
| ENTER User-defined | | ENTER Vadose zone | ENTER | ENTER | ENTER Depth below grade | MORE. |

| ENTER | | |
|-------|--|--|
| ENTER | | |
| ENTER | | |
| ENTER | | |
| | | |

| END | | MORE! | | MORE . |
|--|---------|---|-------|--|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | Vadose zone soil dry bulk density, Pb (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | 0.43 | Vadose zone soil total porosity, n (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | Vadose zone soil water-filled porosity, $\theta_{\mu}^{\ \nu}$ (cm³/cm³) |
| | 250 | ENTER Exposure frequency, EF EF (days/yr) | 0.002 | Vadose zone soil organic carbon fraction, fe (unitless) |
| Used to cale soil cor | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES 9R SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES

Chemical CAS No. (numbers only, no dashes) 205992 ENTER 1.00E+02 ENTER Initial soil conc., C_k (μg/kg) × Benzo(b)fluoranthene

| | | SIC | 13.9 | 15 | 15 | |
|---------------|----|-------------------|--------------|-------------------|----------------|-------|
| | | | | | | |
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | |
| F | | soil vapor | Ts | ב | £ | |
| permeability, | OR | (used to estimate | temperature, | of contamination, | space floor, | |
| soil vapor | | soil type | soil | grade to top | of enclosed | |
| vadose zone | | SCS | Average | Depth below | to bottom | |
| User-defined | | Vadose zone | | | below grade | + |
| | | | | | Depth | MORE |
| FNIFR | | ENTER | ENTER | ENIER | דע דע | W-000 |

| (cm) (°C) permeability) 15 13.9 SIC | Depth below Average SCS grade to top soil type of contamination, temperature, L Ts soil vapor | |
|---|---|--|
|---|---|--|

END

70

25

25

250

1.0E-06

Used to calculate risk-based soil concentration.

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED

Exposure frequency, EF (days/yr)

ENTER
Target
risk for
carcinogens,
TR
(unitless)

ENTER
Target hazard
quotient for

noncarcinogens, THQ (unitless)

ENTER

ENTER

MORE ←

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER
Vadose zone
soil water-filled
porosity,
0,*

ENTER
Vadose zone
soil organic
carbon fraction,
f

v

(g/cm³)

(unitless) 0.43

(cm³/cm³)

(unitless)

0.3

0.002

1.5

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

Chemical CAS No. (numbers only, no dashes) ENTER ENTER Initial soll conc., C_R (μg/kg) YES ×

| + | NO. | |
|-------------|-------|----------|
| below grade | ENTER | 129000 |
| | ENTER | 1.00E+02 |
| | ENTER | |
| Vadose zone | ENTER | Pyrene |
| | | |

| (cm²) | | permeability) | (°C) | (cm) | F |
|--------------|----|-------------------|--------------|-------------------|----|
| ŗ | | soil vapor | Τς | ۲ | |
| permeability | OR | (used to estimate | temperature, | of contamination, | |
| soil vapor | | soil type | soil | | Ĭ |
| vadose zone | | SCS | Average | Depth below | |
| User-defined | | Vadose zone | | | ro |
| ראינא | | | | | |

| | | SIC | 13.9 | 15 | 15 |
|--------------|----|-------------------|--------------|-------------------|----------------|
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) |
| , F | | soil vapor | Î, Ţ | ר | £ |
| permeability | OR | (used to estimate | temperature, | of contamination, | space floor, |
| soil vapor | | soil type | | grade to top | of enclosed |
| vadose zone | | SCS | Average | Depth below | to bottom |
| User-defined | | Vadose zone | | | below grade |
| | | | | | Depth |
| ENTER | | ENTER | ENTER | ENTER | ENTER |

1 of 1

END

70

25

250

1.0E-06

Used to calculate risk-based soil concentration.

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED (yrs)

Exposure frequency,

carcinogens, TR (unitless)

ENTER

ENTER Target risk for

ENTER
Target hazard
quotient for
noncarcinogens,
THQ

(days/yr)

(unitless)

MORE +

ENTER
Vadose zone
soil dry
bulk density,
Pb

ENTER
Vadose zone
soil total
porosity,
n
V

ENTER
Vadose zone
soil water-filled
porosity,

0

v

ENTER
Vadose zone
soil organic
carbon fraction,
f

v

(g/cm³)

(unitless)

(cm³/cm³)

(unitless)

0.43

0.3

0.002

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES OR.

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

Chemical
CAS No.
(numbers only,
no dashes) 207089 ENTER 1.10E+03 ENTER
Initial
soil
conc.,
Ca
(µg/kg) YES Benzo(k)fluoranthene

| | SIC | 13.9 | 15 | 15 | |
|---|---|--|--|---|------|
| User-defined vadose zone soil vapor R permeability k_{c} (cm^{2}) | Vadose zone SCS Soil type (used to estimate OR soil vapor permeability) | Average soil temperature, (T _s (°C) | Depth below grade to top of contamination, L, (cm) | to bottom of enclosed space floor, L _F (15 or 200 cm) | |
| ENTER | ENTER | ENTER | ENTER | Depth | MORE |

| | ← SC 2 1 | |
|------|--|-------|
| 15 | below grade to bottom of enclosed space floor, Lr (15 or 200 cm) | חווות |
| 15 | Depth below grade to top of contamination, L (cm) | באורא |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | O _R | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| END | П | MORE C | П | MORE b |
|--|---------|---|-------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | Vadose zone soil dry bulk density, Pb (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{MC} (yrs) | 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, 0, (cm³/cm³) |
| | 250 | ENTER Exposure frequency, EF (days/yr) | 0.002 | ENTER Vadose zone soil organic carbon fraction, f / unitless) |
| Used to cald soil cor | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | П |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens THQ (unitless) | | |

| CALCULATE RISK-BASE |
|---------------------|
| SED SOIL CO |
| NCENTRATI |
| ON (enter "X" in |
| "YES" box) |
| |

YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

YES

| 218019 1.80E+03 | no dashes) (µg/kg) | • | CAS No. conc., | Initial | ENTER ENTER |
|-----------------|--------------------|---|----------------|---------|-------------|
| Chrysene | Chemical | | | | |

| | | SIC | 13.9 | 15 | 15 | _ |
|--|----|--|---|--|---|------|
| User-defined vadose zone soil vapor permeability, k, (cm²) | OR | Vadose zone SCS Scil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, | below grade to bottom of enclosed space floor, L _F (15 or 200 cm) | • |
| ENTER | | ENTER | ENTER | ENTER | ENTER Depth | MORE |

| | MORE |
|----------|--|
| 1.5 | Vadose zone soil dry bulk density, Ph (g/cm³) |
| | C 7 2 8 |
| 0.43 | Vadose zone soil total porosity, n ^v (unitless) |
| \dashv | 8 |
| 0.3 | Vadose zone oil water-filled porosity, 0, (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, for w |

| END | | MORE | |
|--|---------|---|-------|
| | 70 | Averaging time for carcinogens, AT _C (yrs) | ENTER |
| | 25 | non | ENTER |
| | 25 | Exposure duration, ED (yrs) | ENTER |
| | 250 | Exposure frequency, EF (days/yr) | ENTER |
| Used to ca | 1.0E-06 | Target risk for carcinogens, TR (unitless) | ENTER |
| Jsed to calculate risk-based soil concentration. | | Target hazard quotient for noncarcinogens, THQ (unitless) | ENTER |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) YES 9R

ENTER ENTER Initial YES

| | 7. | - |
|-------------------------------|------------------|---|
| MORE ← | | |
| ENTER Depth below grade | 75092 | CAS No. (numbers only, no dashes) |
| ENTER | 2.50E+01 | soil conc., C _k (µg/kg) |
| ENTER | Ме | |
| ENTER Vadose zone | thylene chloride | Chemical |
| | | |

ENTER

| | | SIC | 13.9 | 15 | 15 |
|-------------------------------------|------|---|-----------------|--|------------------------------------|
| | | | | | |
| k, (cm²) | 9 | soil vapor permeability) | (°C) | (cm) | (15 or 200 cm) |
| User-defined vadose zone soil vapor | OB . | Vadose zone SCS soil type (used to estimate | Average soil | Depth below grade to top of contamination. | to bottom of enclosed space floor, |

| | , | MORE - |
|-------|---|-------------------------------------|
| 1.5 | bulk density, pb^ (g/cm³) | Vadose zone soil dry |
| 0.43 | porosity, n ^v (unitless) | Vadose zone soil total |
| 0.3 | porosity, θ_{w}^{V} (cm³/cm³) | ENTER Vadose zone soil water-filled |
| 0.002 | carbon fraction, f v (unitless) | ENTER Vadose zone soil organic |

| END | | MORE ← |
|--|---------|---|
| | 70 | Averaging time for carcinogens, AT _C (yrs) |
| | Н | no no |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | Н | , |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | Target hazard quotient for noncarcinogens, THQ (unitless) |



| YES | CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) |
|--------------------|--|
| Version 2.3; 03/01 | SL-SCREEN |

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

OR

| ENTER ENTER Initial Chemical soil CAS No. conc., (numbers only, C _R no dashes) (µg/kg) Chemical | ENTER Initial soil conc., G (19/kg) | Elucranthana | 3.20E+03 | 206440 |
|--|--|--------------|----------|----------------|
| ENTER Initial soil conc., Ca (19/kg) | ENTER Initial soil conc., Ca (199/kg) | | | |
| | | Chemical | (µg/kg) | no dashes) |
| | | | ጜ | (numbers only, |
| | | | conc., | CAS No. |
| | | | soil | Chemical |
| 9.53 | 5.23 | | Initial | |
| | ō × | | ENTER | ENTER |
| | V.F.C | | VEO | |

| П | L L | MORE |
|------|---|----------|
| 15 | below grade to bottom of enclosed space floor, L _r | Depth |
| 15 | Depth below grade to top of contamination, L (cm) | הא הא |
| 13.9 | Average soil temperature, T _s (°C) | ENIER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| | + | MORE |
|------|---|-------|
| 15 | below grade to bottom of enclosed space floor, Lr (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, L (cm) | ENTER |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS Soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-define vadose zon soil vapor permeability k, (cm²) | ENTER |

| END | | MORE | wore € |
|--|---------|---|--|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | ENTER Vadose zone soil dry bulk density, Pa (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{nc} (yrs) | Vadose zone soil total porosity, n' (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | Vadose zone soil water-filled porosity, θ_w (cm³/cm³) |
| | 250 | ENTER Exposure frequency, EF (days/yr) | ENTER Vadose zone soil organic carbon fraction, for (unitless) |
| Used to cald soil cor | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR

ENTER ENTER YES

| 193395 | Chemical CAS No. (numbers only, no dashes) | |
|------------------------|--|--|
| 7.90E+02 | Initial soil conc., Ca (µg/kg) | |
| Indeno(1,2,3-cd)pyrene | Chemical | |

| | | SIC | 13.9 | 15 | 15 | |
|--|----|--|--|--|---|-----|
| User-defined vadose zone soil vapor permeability, k, (cm²) | OR | Vadose zone SCS soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, | below grade to bottom of enclosed space floor, L _F | , L |
| ENTER | | ENTER | ENTER | T N | Depth | ш |

MORE

| 7 | MORE + |
|-------|--|
| 15 | ENTER Vadose zone soil dry bulk density, Pb (g/cm³) |
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, θ_w^{ν} (cm³/cm³) |
| 0.000 | ENTER Vadose zone soil organic carbon fraction, f (unitless) |

| END | | MORE |
|---|---------|---|
| | 70 | Averaging time for Carcinogens, AT _C (yrs) |
| | Н | 2 |
| | 25 | Averaging time for noncarcinogens, ATNC (yrs) |
| | H | , s |
| | 25 | Exposure duration, ED (yrs) |
| | Н | |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to calculate soil concent | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

MORE CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) Chemical
CAS No.
(numbers only,
no dashes) ENTER Depth ENTER 72435 7.40E+01 ENTER ENTER
Initial
soil
conc.,
Ca
(µg/kg) YES ENTER OR Methoxychlor ENTER SL-SCREEN Version 2.3; 03/01 ENTER

DATA ENTRY SHEET

| _ | MORE | | MORE . | | ± 000 c |
|-------|---|---|---|---|---|
| 70 | ENTER Averaging time for carcinogens, AT _c (yrs) | 1.5 | ENTER Vadose zone soil dry bulk density, Po (g/cm³) | 15 | below grade to bottom of enclosed space floor, Lr (15 or 200 cm) |
| 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | 0.43 | ENTER Vadose zone soil total porosity, n (unitless) | 15 | Depth below grade to top of contamination, L, (cm) |
| 35 | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, 0 " (cm³/cm³) | 13.9 | Average soil temperature, Ts (°C) |
| 030 | ENTER Exposure frequency, EF (days/yr) | 0.002 | ENTER Vadose zone soil organic carbon fraction, for (unitless) | SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) |
| 20.00 | ENTER Target risk for carcinogens, TR (unitless) | | | | OR. |
| | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | | | User-defined vadose zone soil vapor permeability, k, (cm²) |
| | 25 25 | ENTER ENTER ENTER ENTER Target Averaging Averaging Exposure risk for carcinogens, noncarcinogens, duration, frequency, carcinogens, AT _C AT _{NC} ED EF TR (yrs) (yrs) (days/yr) (unitless) | ENTER ENTER ENTER ENTER ENTER Target time for time for Exposure Exposure risk for carcinogens, noncarcinogens, duration, frequency, carcinogens, AT _{IC} ED EF TR (yrs) (yrs) (yrs) (days/yr) (unitless) | ENTER ENTER ENTER ENTER Vadose zone Vadose zone Vadose zone Vadose zone Soil dry Soil total Soil water-filled Soil organic bulk density, porosity, porosity, carbon fraction, Pp (g/cm³) (unitless) ENTER ENTER ENTER ENTER ENTER ENTER Target time for time for Exposure Exposure risk for Carcinogens, noncarcinogens, duration, frequency, carcinogens, AT _{IC} AT _{IC} ED EF (yrs) (yrs) (unitless) | ENTER ENTER ENTER ENTER Vadose zone Zone Vadose zone |



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

Ver

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X
ENTER
Initial soil conc.,
C₄

ENTER

| | | SIC | 13.9 | 15 | 15 | |
|--|----|--|---|--|---|------|
| User-defined vadose zone soil vapor permeability. k, (cm²) | OR | Vadose zone SCS soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L _t (cm) | below grade to bottom of enclosed space floor, L (15 or 200 cm) | |
| ENTER | | ENTER | ENTER | ENTER | ENTER | MORE |
| Ц | | Anthracene | | 3.20E+03 | 120127 | |
| II | | Chemical | | soil conc., C _k (µg/kg) | Chemical CAS No. (numbers only, no dashes) | |

| END | | MORE | | MORE ■ |
|--|---------|---|-------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | Vadose zone soil dry bulk density, Ph (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | 0.43 | Vadose zone soil total porosity, n' (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, 0 (cm³/cm³) |
| | 250 | ENTER Exposure frequency, EF (days/yr) | 0.002 | ENTER Vadose zone soil organic carbon fraction, fe (unitless) |
| Used to cal soil co | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | ш |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | |



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

OR

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| ENTER ENTER Initial Chemical soil CAS No. conc., (numbers only, C _R no dashes) (up/ka) Chamical | Cicilical | 11-37 | The state of |
|--|-----------|---------|----------------|
| | Chamical | (ug/kg) | no dashes) |
| | | ኄ | (numbers only, |
| | | conc., | CAS No. |
| | | soll | Chemical |
| | | Initial | |
| | | ENTER | ENTER |
| | × | YES | |

129000

3.40E+03

Pyrene

| 15 15 | below grade to bottom of enclosed space floor, Lr Lr (15 or 200 cm) Depth below grade to top grade to top grade to top grade to top (contaminati | Denth ENTER |
|-------|--|-------------|
| 13.9 | o top soil ination, temperature, T s) (°C) | ER ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |

| 1.5 | Vadose zone soil dry bulk density, Pb (g/cm³) |
|-------|--|
| 0.43 | Vadose zone soil total porosity, n v (unitless) |
| H | va soil · p |
| 0.3 | ENTER Vadose zone soil water-filled porosity, θ_{w}^{V} (cm ³ /cm ³) |
| + | 8.0 |
| 0.002 | ENTER Vadose zone soil organic carbon fraction, f (unitless) |

| END | | MORE + |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for nonçarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |
| | | |

SL-SCREEN Version 2.3; 03/01

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) YES OR

| Mercury (elemental) | 1.10E+03 | 7439976 |
|---------------------|----------|---------------|
| | | |
| Chemical | (µg/kg) | no dashes) |
| | ۍ ګ | numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

YES

| П | MORE bel | |
|------|---|-------|
| 15 | Depth below grade to bottom of enclosed space floor, L _F 15 or 200 cm) | ENTER |
| 15 | Depth below grade to top of contamination, L (cm) | ENTER |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| 15 | below grade to bottom of enclosed space floor, Lr (15 or 200 cm |] |
|------|--|---|
| 15 | de Depth below d grade to top r, of contamination, L (cm) | |
| 13.9 | Average soil temperature, T _s (°C) | |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | |

| П | MORE by | |
|------|--|--------|
| 15 | Depth below grade to bottom of enclosed space floor, Lr (15 or 200 cm) | ENIEN |
| 15 | Depth below grade to top of contamination, (cm) | האורא |
| 13.9 | Average soil temperature, T _S (°C) | באורא |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | TN TR |
| | O _R | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | מאורא. |

END

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED (yrs)

Exposure frequency, EF (days/yr)

ENTER
Target
risk for
carcinogens,
TR
(unitless)

ENTER
Target hazard
quotient for
noncarcinogens,
THQ

(unitless)

250

1.0E-06

Used to calculate risk-based soil concentration.

ENTER

ENTER

MORE .

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n^Y

ENTER
Vadose zone
soil organic
carbon fraction,
f

c

v

(g/cm³) 1.5

(unitless) 0.43

(cm³/cm³)

(unitless) 0.002

0.3

1 of 1

MORE + CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) Chemical
CAS No.
(numbers only,
no dashes) (15 or 200 cm) Depth below grade to bottom of enclosed space floor, ENTER 79345 15 Depth below grade to top of contamination, 6.90E+00 ENTER C, (µg/kg) **ENTER** Initial (m) soil 15 YES YES temperature, T_s (°C) Average soil ENTER 13.9 OR. 1,1,2,2-Tetrachloroethane Vadose zone SCS soil type (used to estimate soil vapor permeability) ENTER SIC OR SL-SCREEN Version 2.3; 03/01 User-defined vadose zone soil vapor permeability, ENTER (cm²)

DATA ENTRY SHEET

END MORE → Averaging time for carcinogens, 70 ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs) Exposure duration, ED 25 Exposure frequency, EF (days/yr) ENTER 250 carcinogens, TR (unitless) ENTER Target risk for 1.0E-06 Used to calculate risk-based soil concentration. ENTER
Target hazard
quotient for
noncarcinogens, (unitless) ZHQ

MORE →

ENTER Vadose zone soil dry

ENTER
Vadose zone
soil total
porosity,
n
v

Vadose zone soil water-filled

ENTER
Vadose zone
soil organic
carbon fraction,
f

v

porosity, $\theta_{\bullet,\bullet}^{V}$ (cm³/cm³)

bulk density,

(g/cm³)

(unitless)

(unitless)

0.43

0.3

0.002



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| ENTER ENTER Initial Chemical soil CAS No. conc., (numbers only, Canno dashes) (µg/kg) Chemical | | 6 70E 101 | 77548 |
|--|----------|-----------|----------------|
| ENTER Initial soil conc., Ca (rig/kg) | | | |
| | Chemical | (µg/kg) | no dashes) |
| | | ኄ | (numbers only, |
| | | conc., | CAS No. |
| | | soil | Chemical |
| | | Initial | |
| > | | ENTER | ENTER |
| | > | Ī | |

| | | MORE |
|------|--|-------|
| 15 | to bottom of enclosed space floor, L _F (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, | ENTER |
| 13.9 | Average soil temperature, | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| 7 | MORE + | | MORE ■ |
|----|---|-------|---|
| 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | Vadose zone soil dry bulk density, Po (g/cm³) |
| 2 | ENTER Averaging time for noncarrinogens, AT _{NC} (yrs) | 0.43 | ENTER Vadose zone soil total porosity, n' (unitless) |
| | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, 0 (cm³/cm³) |
| | ENTER Exposure frequency, EF (days/yr) | 0.002 | ENTER Vadose zone soil organic carbon fraction, f w (unitless) |
| | ENTER Target risk for carcinogens, TR (unitless) | ш | |
| | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | |

END

1.0E-06

Used to calculate risk-based soil concentration.

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

ENTER Initial soil conc., Ca (µg/kg) YES

Chemical CAS No. (numbers only, no dashes) 83329 6.40E+03 Acenaphthene Chemical

| | | MORE |
|------|--|--------|
| 15 | below grade to bottom of enclosed space floor, L _f (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, L (cm) | מא בהא |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| ٦. | OR. | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

MORE +

ENTER
Vadose zone
soil dry
bulk density,
Ph
(g/cm³)

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER
Vadose zone
soil water-filled
porosity, θ_w (cm³/cm³)

ENTER
Vadose zone
soil organic
carbon fraction,
f_c
'

(unitless)

(unitless)

| END | _ | MORE → | |
|--|---------|---|-------|
| | 70 | ENTER Averaging time for Carcinogens, AT _C (yrs) | 1.5 |
| | 25 | ENTER Averaging time for noncarchogens, AT _{sc} (yrs) | 0.43 |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 |
| | 250 | ENTER Exposure frequency, EF (days/yr) | 0.002 |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | |
| Used to calculate risk-based soil concentration. | | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | |



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

0R

| Chemical | (µg/kg) | no dashes) |
|----------|---------|----------------|
| | ڻ ٽ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |
| × | YES | |

83329

2.10E+04

Acenaphthene

| | | SIC | 13.9 | 15 | 15 | |
|------------------------------|-----|--|---------------------|-------------------------------------|--------------------------|------|
| permeability, k, (cm²) | OR. | (used to estimate soil vapor permeability) | T _s (°C) | or contamination, L _t | (15 or 200 cm) | |
| vadose zone soil vapor | 3 | soil type | Average soil | Depth below grade to top | to bottom of enclosed | • |
| ENTER | | ENTER | ENTER | ENTER | Depth | MORE |

| _ | | + ! |
|------|--|-------------|
| 15 | to bottom of enclosed space floor, L _r (15 or 200 cm) | below grade |
| 15 | Depth below grade to top of contamination, | |
| 13.9 | Average soil temperature, Ts (°C) | |
| SIC | soil type soil vapor soil vapor permeability) | Vadose zone |
| | OR | |
| | vadose zo soil vapo permeabil k, (cm²) | User-defir |

| | | | + | MORE | |
|------------|-----|------------------|-------------------|-------------|-------|
| (g/cm³) | ₽, | bulk density, | soil dry | Vadose zone | ENTER |
| (unitless) | ٦ | porosity, | soil total | Vadose zone | ENTER |
| (cm³/cm³) | 9*, | porosity, | soil water-filled | Vadose zone | ENTER |
| (unitless) | 8 < | carbon fraction, | soil organic | Vadose zone | ENTER |

(unitless) 0.002

| | | , [|
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

MORE +

END

| ;; | CALCULATE RISK-BASED SOIL CONCENT |
|--------|-----------------------------------|
| | RATION (enter "X" in "YES" box) |
| Versio | SL |

SL-SCREEN ion 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

Chemical CAS No. (numbers only, no dashes) ENTER ENTER Initial soil conc., Ca (µg/kg) YES Chemical

120127

3.10E+04

Anthracene

| П | MORE (1 | |
|------|---|-------|
| 15 | Depth below grade to bottom of enclosed space floor, L _f (15 or 200 cm) | ENTED |
| 15 | Depth below grade to top of contamination, | CATED |
| 13.9 | Average soil temperature, | 1 |
| SIC | Vadose zone SCS Soil type (used to estimate soil vapor permeability) | |
| _ | OR . | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | |

| 15 | below grade to bottom Dep of enclosed grad space floor, of conl L 15 or 200 cm) |
|------|---|
| 15 | Depth below grade to top of contamination, |
| 13.9 | Average soil temperature, T _s (°C) |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) |
| | O _R |

| | • | MORE | |
|-------|--|-------------|-------|
| 1.5 | soil dry bulk density, Pb^ (g/cm³) | Vadose zone | ENIER |
| 0.43 | soil total porosity, n' (unitless) | Vadose zone | ENTER |
| 0.3 | soil water-filled porosity, θ_{w}^{V} (cm³/cm³) | Vadose zone | ENTER |
| 0.002 | soil organic carbon fraction, $f_{cc}^{\ \ \ \ \ \ \ \ \ \ }$ (unitless) | Vadose zone | ENTER |

| END | | MORE |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | Exposure duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| Used to calculate risk-based soil concentration. | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

YES

| Benzene | 7.00E+01 | 71432 |
|----------|----------|----------------|
| | | |
| Chemical | (µg/kg) | no dashes) |
| | ኄ | (numbers only, |
| | conc., | CAS No. |
| | Soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

| | | MORE |
|------|---|-------|
| 15 | below grade to bottom of enclosed space floor, L _f (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, L _t (cm) | ENTER |
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| | 4 |
|------|---|
| 15 | below grade to bottom of enclosed space floor, L _e (15 or 200 cm) |
| 15 | Depth below grade to top of contamination, L (cm) |
| 13.9 | Average soil temperature, T _s (°C) |
| SIC | Vadose zone SCS Soil type (used to estimate soil vapor permeability) |
| | O _R |
| | User vade soil perm |

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER
Vadose zone
soil water-filled
porosity,
0, v
(cm³/cm³)

ENTER
Vadose zone
soil organic
carbon fraction,

t_w

t_w

0.3

(unitless) 0.002

(g/cm³)

| END | | MORE → |
|---|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |



CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

Version 2.3; 03/01

YES

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. Conc.,
(numbers only, C_R
no dashes) (µg/kg) Chemical

56553 7.00E+04 Benz(a)anthracene

| | | SIC | 13.9 | 15 | 15 | |
|---|----|--|---|--|--|--------|
| vadose zone soil vapor permeability, k, (cm²) | OR | SCS Soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L, (cm) | to bottom of enclosed space floor, L _r (15 or 200 cm) | |
| ENTER | | ENTER Vadose zone | ENTER | ENTER | Depth below grade | MORE + |

| MORE | |
|----------------------|--|
| Vadose zone | |
| Vadose zone | |
| ENTER Vadose zone | |
| ENTER Vadose zone | |
| | |

| END | | MORE + | | 4 |
|--|---------|---|-------|--|
| | 70 | Averaging time for carcinogens, AT _C (yrs) | 1.5 | soil dry bulk density, Po (g/cm³) |
| | 25 | ENTER Averaging time for nencarcinogens, AT _{NC} (yrs) | 0.43 | soil total porosity, n' (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | soil water-filled porosity, $\theta_w^{\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ |
| | 250 | EXPOSURE frequency, EF (days/yr) | 0.002 | soil organic carbon fraction, $f_{\infty}^{\ \ \ \ \ \ \ \ }$ (unitless) |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | 200 |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below).

YES

X

| 001100 | | |
|--------|----------|----------------|
| Renzol | 1.20E+05 | 50328 |
| | | |
| Ch | (µg/kg) | no dashes) |
| | ڻ ٽ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

Benzo(a)pyrene

| 15 | octow grade to bottom of enclosed space floor, L (15 or 200 cm) | MORE Depth |
|------|--|------------|
| 15 | Depth below grade to top of contamination, L (cm) | ENIER |
| 13.9 | Average soil temperature, Ts (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR . | |
| | User-defined vadose zone soil vapor permeability (cm²) | ENTER |

| | Vadu Su bulk |
|-------|---|
| 1.5 | Vadose zone soil dry bulk density, Ps (g/cm³) |
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, θ_w (cm³/cm³) |
| 0.002 | ENTER Vadose zone soil organic carbon fraction, $t_{\rm cc}$ (unitless) |

| END | | MORE |
|--|---------|---|
| | 70 | Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{inc} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR

ENTER YES

| ENTER ENTER | ENTER | ENTER |
|----------------------|--|--|
| Benzo(b)fluoranthene | 4.10E+04 | 205992 |
| Chemical | Initial soil conc., C _R (µg/kg) | Chemical CAS No. (numbers only, no dashes) |

| 15 | below grade to bottom of enclosed space floor, L _r (15 or 200 cm | |
|------|---|-------|
| 15 | Depth below grade to top of contamination, L (cm) | |
| 13.9 | Average soil temperature, T _s (°C) | |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | |
| | O _R | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENIEK |

| 1.5 | ENTER Vadose zone soil dry bulk density, Po (g/cm³) |
|-------|---|
| 0.43 | ENTER Vadose zone soil total porosity, n' (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, ew (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, f (unitless) |

| END | _ | MORE . |
|---|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _c (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| sed to calculate risk-based soil concentration. | - | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| ENTER ENTER Initial Chemical soil CAS No. conc., (numbers only, C _q no dashes) (µg/kg) Chemical | 2 | 8.10E+04 | 129000 |
|--|----------|----------|---------------|
| | | | |
| | Chemical | (µg/kg) | no dashes) |
| | | ኄ | numbers only, |
| | | conc., | CAS No. |
| | | soil | Chemical |
| 1,5151 | | Initial | |
| | | ENTER | ENTER |
| | × | YES | |

| SIC | Vadose zone Vadose zone SCS vadose zone soil type soil vapor your control of the control o | ENTER |
|------|--|-------|
| 13.9 | Average soil temperature, T _s (°C) | ENTER |
| 15 | Depth below grade to top of contamination, L _t (cm) | T N |
| 15 | below grade to bottom of enclosed space floor, L _f (15 or 200 cm) | Depth |

| 1.5 | Vadose zone soil dry bulk density, Po (g/cm³) |
|-------|--|
| 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| 0.3 | ENTER Vadose zone soil water-filled porosity, 0,, (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, for the carbon fraction, for the carbon fraction, for the carbon fraction for the carbon fraction for the carbon fraction for the carbon fraction frac |

| END | _ | MORE → |
|--|---------|---|
| | 70 | Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

Versio

YES

Versio

SL-SCREEN Version 2.3; 03/01

 $\label{eq:calculate} OR$ CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

| 5.10E+04 | 207089 |
|----------------------|--------------------------------------|
| A CONTRACT OF STREET | |
| (µg/kg) | no dashes) |
| ኄ | (numbers only, |
| conc., | CAS No. |
| soil | Chemical |
| Initial | |
| ENTER | ENTER |
| | ENTER Initial Soil Conc., Ca (µg/kg) |

| Depth below Average SCS grade to top soil soil type f contamination, temperature, L Ts soil vapor (CD) permeability) 15 13.9 SIC | CMICK CMICK |
|---|-------------|
|---|-------------|

| 1.5 | soil dry bulk density, Po (g/cm³) |
|-------|--|
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, $\theta_w^{\ \nu}$ (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, to v (unitless) |

| END | _ | MORE → |
|---|---------|---|
| | 70 | Averaging time for carcinogens, AT _c (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, ATric (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

Version 2.3; 03/01 SL-SCREEN

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

| 1 | (by/frit) | no dasnes) |
|---|-----------|----------------|
| | (- () | and danker |
| | ኄ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |
| × | YES | |

117817

1.40E+03

Bis(2-ethylhexyl)phthalate

| | | SIC | 13.9 | 15 | 15 | |
|---|----|--|---|---|--|------|
| User-defined vadose zone soil vapor permeability, (cm²) | OR | Vadose zone SCS Soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L (cm) | below grade to bottom of enclosed space floor, L _F (15 or 200 cm) | |
| ENTER | | ENTER | ENTER | ENTER | Depth | MORE |

| | | SIC | 13.9 | 15 | 15 |
|--|----------------|--|---|---|---|
| User-defined vadose zone soil vapor permeability, k, (cm²) | O _R | Vadose zone SCS Soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L (cm) | below grade to bottom of enclosed space floor, L _F (15 or 200 cm) |
| ENTER | | ENTER | ENTER | ENTER | Depth |

| soil type soil vapor (used to estimate OR permeability soil vapor k, permeability) | | 15 | 15 | |
|--|------------------------------|--|--|------|
| 8877.0 | Average soil temperature, (u | Depth below grade to top of contamination, L, (cm) | to bottom of enclosed space floor, L _r (15 or 200 cm) | |
| Vadose zone | | | Depth below grade | MORE |

| Walley ! | | |
|----------|---|------|
| 10/10 | 1 | |
| 120 | | 1591 |
| | | 12 |

END

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED (yrs)

Exposure frequency, EF (days/yr)

(unitless) 1.0E-06

ENTER
Target
risk for
carcinogens,
TR

ENTER
Target hazard
quotient for
noncarcinogens,
THQ
(unitless)

ENTER

ENTER

25

25

250

Used to calculate risk-based soil concentration.

MORE **→**

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER

Vadose zone
soil water-filled
porosity,
0
v
0
v
v

ENTER
Vadose zone
soil organic
carbon fraction,
f

v

(g/cm³)

(unitless)

(cm³/cm³)

(unitless) 0.002

0.43

0.3

| | CALCULATE RISK-BASED SOIL CONCENTR |
|------|--|
| | CONCENTRATION (enter "X" in "YES" box) |
| Vers | |

SL-SCREEN Version 2.3; 03/01

YES

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, C_R
no dashes) (µg/kg) Chemical

218019 7.80E+04 Chrysene

| | | SIC | 13.9 | 15 | 15 | _ |
|--|----|---|---|--|---|------|
| User-defined vadose zone soil vapor permeability, k, (cm²) | OR | Vadose zone SCS soil type e, (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, | below grade to bottom of enclosed space floor, L _F (15 or 200 cm) | |
| ENTER | | ENTER | ENTER | ENTER | Depth | MORE |

| | MORE - |
|-------|--|
| 1.5 | ENTER Vadose zone soil dry bulk density, Ph (g/cm³) |
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | ENTER Vadose zone soil water-filled porosity, θ_{w}^{V} (cm^{3}/cm^{3}) |
| 0.002 | ENTER Vadose zone soil organic carbon fraction, for unitless) |

| END | _ | MORE |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| ` | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

v) SL Versio

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. Conc.,
(numbers only, C_R
no dashes) (µg/kg) Chemical

53703 8.80E+03 Dibenz(a,h)anthracene

| on, temperature, (used to estimate OR Ts soil vapor (°C) permeability) | | + | MORE |
|---|-------------|--------------|-------|
| soil soil type temperature, (used to estimate OR Ts soil vapor (°C) permeability) | to bottom | below grade | Denth |
| soil type (used to estimate OR soil vapor permeability) | Depth below | | |
| _ | Average | | |
| 71 | SS | Vadose zone | |
| | | | |
| permeability, (cm²) | vadose zone | User-defined | באורא |

| 1.5 | Vadose zone soil dry bulk density, Pb (g/cm³) |
|-------|--|
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3) |
| 0.002 | Vadose zone soil organic carbon fraction, fe v (unitless) |

| END | | MORE : |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | Exposure duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) 0R

YES

| (IIII/ka) | no dashes) |
|-----------|----------------|
| ኄ | (numbers only, |
| conc., | CAS No. |
| soil | Chemical |
| Initial | |
| ENTER | ENTER |

| 75092 5.30E+01 | no dashes) (µg/kg) | (numbers only, C _R | CAS No. conc., | | |
|--------------------|--------------------|-------------------------------|----------------|--|--|
| Methylene chloride | Chemical | | | | |

| | SIC | 13.9 | 15 | 15 |
|--------------------------------------|--------------------|--|---|--|
| soil vapor OR permeability, k, (cm³) | nate Y) | soil temperature, T _s (°C) | grade to top of contamination, L (cm) | space floor, L _r (15 or 200 cm) |
| User-defined | Vadose zone SCS | Average | Depth below | Depth below grade to bottom |

| | ← | MORE |
|------|--|-------------|
| 15 | below grade to bottom of enclosed space floor, L _F (15 or 200 cm) | Depth |
| 15 | Depth below grade to top of contamination, | בא הא הא |
| 13.9 | Average soil temperature, T _s (°C) | EN ER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| END | | MORE | MORE → |
|--|---------|---|--|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | Vadose zone soil dry bulk density, Pb (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | ENTER Vadose zone soil total porosity, n (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | ENTER Vadose zone soil water-filled porosity, |
| | 250 | EXPOSURE frequency, EF (days/yr) | ENTER Vadose zone soil organic carbon fraction, fee (unitless) |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR TR (unitless) | |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | 9 |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) Chemical CAS No. (numbers only, no dashes) ENTER 60571 1.50E+01 Initial soil conc., YES Dieldrin

| SIC | 15 13.9 SIC | Depth below Average SCS grade to top soil soil type f contamination, temperature, the Ts soil vapor (cm) (°C) permeability) | ENIEZ ENIEZ |
|-----|-------------|---|-------------|
|-----|-------------|---|-------------|

| 1.5 | Vadose zone soil dry bulk density, Pb (g/cm³) |
|-------|---|
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | ENTER Vadose zone soil water-filled porosity, 0," (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, f v (unitless) |

| END | | MORE + |
|---|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | Averaging time for noncarcinogens, AT _{ac} (yrs) |
| | 25 | Exposure duration, ED (yrs) |
| | 250 | ENTER Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

TES DOX)

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| Endosulfan | 3.40E+01 | 115297 |
|------------|----------|----------------|
| Chemical | (µg/kg) | no dashes) |
| | ڻ ٽ | (numbers only, |
| | conc., | CAS No. |
| | Soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

| | | SIC | 13.9 | 15 | 15 | _ |
|--|--|---------------------------------------|---------------------------------|--|--|--------|
| (cm²) | | soil vapor permeability) | (°C) | (cm) L | L _r (15 or 200 cm) | |
| vadose zone soil vapor permeability. | OR . | SCS soil type (used to estimate | Average soil temperature, | Depth below grade to top of contamination, | to bottom of enclosed space floor, | |
| User-defined | | Vadose zone | | | Depth below grade | MORE + |
| ENTER | No. of Contract of | ENTER | ENTER | ENTER | ENTER | |

| END | | MORE → | | , | MORE + |
|--|---------|---|-------|---|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | bulk density, P_b (g/cm ³) | ENTER Vadose zone soil dry |
| | 25 | ENTER Averaging time for noncardnogens, AT _{MC} (yrs) | 0.43 | porosity, n ^v (unitless) | ENTER Vadose zone soil total |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | porosity, θ_{w}^{V} (cm³/cm³) | ENTER Vadose zone soil water-filled |
| | 250 | ENTER Exposure frequency, EF (days/yr) | 0.002 | carbon fraction, $f_{cc}^{\ \ \ \ \ \ \ }$ (unitless) | ENTER Vadose zone soil organic |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | U | 11 | |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | | |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

Versi

SL-SCREEN Version 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, C₄
no dashes) (µg/kg)

no dashes) (μg/kg) Chemical

115297 | 1.10E+01 Endosulfan

| 15 | below grade to bottom Deplor of enclosed grad space floor, of cont transfer of cont transfer (15 or 200 cm) | , |
|------|---|--------|
| 15 | Depth below grade to top of contamination, te | ! |
| 13.9 | Average soil mperature, T _s (°C) | |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | |
| | Q. | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | 0.0100 |

| 2010 | | | |
|------|--|--|--|
| 910 | | | |
| | | | |

| _ | MORE ← | |
|------|--|-------------|
| 10 | Vadose zone soil dry bulk density, Ph (g/cm³) | 1 |
| 0.43 | Vadose zone soil total porosity, n' (unitless) | 1 |
| 0.3 | Vadose zone soil water-filled porosity, θ_w^{ν} (cm³/cm³) | |
| 0000 | Vadose zone soil organic carbon fraction, fe (unitless) | |
| 000 | soil organic arbon fraction, f _{cc} v | Vadose zone |

| END | | 1 | MORE → |
|---------------------|------------------------------|---------|---|
| | | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | | 25 | ENTER Averaging time for noncarcinogens, AT _{MC} (yrs) |
| | | 25 | Exposure duration, ED (yrs) |
| | | 250 | EXPOSURE frequency, EF (days/yr) |
| soil co | Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| soil concentration. | Jsed to calculate risk-based | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

YES

| 72208 1. | CAS No. (numbers only, no dashes) (| |
|----------|-------------------------------------|------------------|
| .70E+01 | (μg/kg) | ENTER Initial |
| Endrin | Chemical | |

| | | SIC | 13.9 | 15 | 15 | _ |
|--------------------|----|-------------------|--------------|-------------------|----------------|------|
| (cm ²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | œ. |
| r | | soil vapor | Τ, | ŗ | ť | |
| permeability, | OR | (used to estimate | temperature, | of contamination, | space floor, | |
| soil vapor | | soil type | | grade to top | of enclosed | |
| vadose zone | | SCS | Average | Depth below | to bottom | |
| User-defined | | Vadose zone | | | below grade | + |
| | | | | | Depth | MORE |
| ENTER | | ENTER | ENTER | ENTER | ENIER | |

| | | SIC | 13.9 | 15 | 15 |
|--|----|--------------------------------|---------------------------------|--|--------------------------|
| (cm²) | | soil vapor permeability) | (°C) | (cm) | (15 or 200 cm) |
| vadose zone soil vapor permeability, | OR | soil type (used to estimate | Average soil temperature, | Depth below grade to top of contamination, | of enclosed space floor, |
| User-defined | | Vadose zone | | | Depth below grade |
| ENTER | | ENTER | ENTER | ENTER | ENTER |

| | | SIC | 13.9 | 15 | 15 | _ |
|---------------|----|-------------------|--------------|-------------------|----------------|------|
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | 2 |
| ₹ | | soil vapor | 75 | ŗ | £ | |
| permeability, | OR | (used to estimate | temperature, | of contamination, | space floor, | |
| soil vapor | | soil type | Soil | grade to top | of enclosed | |
| vadose zone | | SCS | Average | Depth below | to bottom | |
| User-defined | | Vadose zone | | | below grade | + |
| | | | | | Depth | MORE |
| ENTER | | ENTER | ENTER | ENTER | ENTER | |

MORE +

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER
Vadose zone
soil water-filled
porosity,
0
V

ENTER
Vadose zone
soil organic
carbon fraction,
f

v

(g/cm³)

(unitless)

(cm³/cm³)

(unitless)

0.3

0.002

| | 0 | |
|--|---|--|
| | | |

END

70

25

250

1.0E-06

(unitless)

Used to calculate risk-based soil concentration.

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
noncarchogens,
AT nc
(yrs)

Exposure duration, ED (yrs)

Exposure frequency, EF (days/yr)

ENTER
Target
risk for
carcinogens,
TR
(unitless)

ENTER
Target hazard
quotient for
noncarcinogens,
THQ

ENTER

ENTER

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) YES OR

YES ×

ENTER ENTER
Initial
soil
conc.,
Ca
(µg/kg)

Chemical CAS No. (numbers only, no dashes) 100414 2.30E+02 Ethylbenzene

| | | SIC | 13.9 | 15 | 15 | _ |
|--|----------------|---|---|--|--|---|
| User-defined vadose zone soil vapor permeability, k, (cm²) | O _R | Vadose zone SCS SCI type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L, (cm) | to bottom of enclosed space floor, Le (15 or 200 cm) | |
| ENTER | | ENTER | ENTER | ENTER | ENTER | m |

MORE +

| Н | 1 | |
|------|-----------------------------|--|
| 15 | (cm) | Depth below grade to top of contamination, |
| 13.9 | (5) 1 ² | Average soil temperature, |
| SIC | soil vapor permeability) | SCS soil type (used to estimate |
| | | OR |
| | | vado soil |

| (unitle | (cm³/cm³) | (unitless) | (g/cm³) |
|-----------|-------------------|-------------|---------------|
| 8 < | θ. | ٦ | ₽, |
| carbon fr | porosity, | porosity, | bulk density, |
| soil org | soil water-filled | soil total | soil dry |
| Vadose | Vadose zone | Vadose zone | Vadose zone |
| ENTI | ENTER | ENTER | ENTER |

MORE

| END | | MORE + |
|---|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _c (yrs) |
| | Н | 2 |
| | 25 | ENTER Averaging time for oncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

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YES

YES

OR

NCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| Elioranthona | 1.05E+05 | 206440 |
|--------------|----------|---------------|
| | | |
| Chemical | (μg/kg) | no dashes) |
| | گ | numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

| | | SIC | 13.9 | 15 | 15 | |
|---------------|----|-------------------|--------------|-------------------|----------------|------|
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | 11 |
| ŗ | | soil vapor | 7 | ר | ŗ | |
| permeability, | OR | (used to estimate | temperature, | of contamination, | space floor, | |
| soil vapor | | soil type | soil | grade to top | of enclosed | |
| vadose zone | | SCS | Average | Depth below | to bottom | |
| User-defined | | Vadose zone | | | below grade | + |
| | | | | | Depth | MORE |
| ENTER | | ENTER | ENTER | ENTER | ENTER | |

| ENTER EN | | |
|----------|--|--|
| m | | |
| ENTER | | |
| ENTER | | |
| ENTER | | |

| _ | MORE |
|-------|--|
| 1.5 | Vadose zone soil dry bulk density, Ph (9/cm³) |
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, θ_{\star}^{ν} (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, fe' (unitless) |

| END | С | MORE . |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) |
| | 25 | EXPOSURE duration, ED (yrs) |
| | 250 | EXPOSURE frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR

ENTER Initial soil YES ×

Chemical
CAS No.
(numbers only,
no dashes) ENTER 86737 1.40E+04 conc., C_k (μg/kg) Fluorene

| 4 | space floor, | of enclosed | to bottom | below grade | Depth | ENTER | |
|------------|-------------------|--------------|-------------|--------------|-------|-------|--|
| ۲ | of contamination, | grade to top | Depth below | | | ENTER | |
| 75 | temperature, | soil | Average | | | ENTER | |
| soil vapor | (used to estimate | soil type | SCS | Vadose zone | | ENTER | |
| | OR | | | | | | |
| 7 | permeability, | soil vapor | vadose zone | User-defined | | ENTER | |

MORE ←

| , (used | ature, |
|--------------------|--------|
| soil type | - |
| | age |
| Va | |
| Vadose zone SCS | |

| | | SIC | 13.9 | 15 | 15 | |
|-------------------------------------|----|---------------------------------------|---------------------------------|--|------------------------------------|----|
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | 11 |
| vadose zo soil vapo permeabil | OR | SCS soil type (used to estimate | Average soil temperature, | Depth below grade to top of contamination, | to bottom of enclosed space floor, | |
| User-defi | | Vadose zone | | | Depth below grade | |

1 of 1

END

MORE →

ENTER
Averaging
time for
carcinogens,

ENTER
Averaging
time for
nopcarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED (yrs)

Exposure frequency, EF (days/yr)

ENTER
Target
risk for
carcinogens,
TR
(unitless)

ENTER
Target hazard
quotient for
noncarcinogens,
THQ

(unitless)

ENTER

ENTER

(yrs)

25

250

1.0E-06

Used to calculate risk-based soil concentration.

MORE

Vadose zone soil dry bulk density,

ENTER
Vadose zone
soil total
porosity,
n

ENTER
Vadose zone
soil water-filled
porosity,
0 w

ENTER
Vadose zone
soil organic
carbon fraction,
f

v
f

v

(g/cm³)

(unitless)

(cm³/cm³)

(unitless)

1.5

0.43

0.3

0.002

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

YES

×

| Heptachlor epoxide | 1.70E+01 | 1024573 |
|--------------------|----------|----------------|
| | | |
| Chemical | (µg/kg) | no dashes) |
| | ያ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | HNIEK | מאותא |

| | | | | , |
|------------|-------------|---------|--------------|-------------|
| soil vapo | soil type | soil | grade to top | of enclosed |
| vadose zoi | SCS | Average | Depth below | to bottom |
| User-defin | Vadose zone | | | below grade |
| | | | | Depth |
| ENTER | ENTER | ENTER | ENTER | ENTER |
| | | | | |
| | | | | |

| 15 | below grade to bottom of enclosed space floor, c. L. (15 or 200 cm) | 1 |
|------|--|-------|
| 15 | Depth below grade to top of contamination, (cm) | CMICK |
| 13.9 | Average soil temperature, T _s (°C) | ENIEX |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | EN EX |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| | 3 | |
|--|---|--|
| | - | |

END

MORE +

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

ENTER
Averaging
time for
nencarcinogens,
AT_{NC}
(yrs)

Exposure duration, ED (yrs)

Exposure frequency, EF (days/yr)

(unitless) 1.0E-06

(unitless)

ENTER
Target
risk for
carcinogens,
TR

ENTER
Target hazard
quotient for
noncarcinogens,
THQ

250

Used to calculate risk-based soil concentration.

ENTER

ENTER

MORE →

ENTER
Vadose zone
soil dry
bulk density,

ENTER
Vadose zone
soil total
porosity,
n

ENTER
Vadose zone
soil organic
carbon fraction,
fc
'

(g/cm³)

(unitless) 0.43

(cm³/cm³)

(unitless)

0.3

0.002

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, C_k
no dashes) (µg/kg)

193395 4.40E+04 Indeno(1,2,3-cd)pyrene

ENTER ENTER ENTER

Depth

below grade to bottom Depth below Average of enclosed grade to top soil space floor, of contamination, temperature, L₂ L₂ L₂ L₂ L₂ (2m) (cm) (°C) permeability)

ENTER ENTER ENTER

ENTER

Vadose zone

Vadose zone

Vadose zone

SCS

**vadose zone
**soil vapor

fused to estimate OR permeability,

("C")

("C")

("C")

("C")

("C")

15

13.9

SIC

| _ | | MORE ↓ |
|-------|-------------------------------|--------------------------------------|
| 1.5 | (g/cm³) | Vadose zone soil dry |
| 0.43 | porosity, n' (unitless) | ENTER Vadose zone soil total |
| 0.3 | orosity, 0, v (cm³/cm³) | ENTER Vadose zone soil water-filled |
| 0.002 | f _{cc} (unitless) | ENTER Vadose zone soil organic |
| | | |

| END | | | MORE | |
|---|---------|--|-----------------------|-------|
| | 70 | carcinogens, AT _C (yrs) | Averaging time for | ENTER |
| | 25 | noncarcinogens, AT _{NC} (yrs) | Averaging time for | ENTER |
| | 25 | 11 | | ENTER |
| | 250 | frequency, EF (days/yr) | Exposure | ENTER |
| Used to ca | 1.0E-06 | carcinogens, TR (unitless) | Target risk for | ENTER |
| to calculate risk-based soil concentration. | 1 | noncarcinogens, THQ (unitless) | | ENTER |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

SL-SCREEN Version 2.3; 03/01

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

YES

| Methoxychlor | 5.90E+02 | 72435 |
|--------------|----------|----------------|
| | | |
| Chemical | (µg/kg) | no dashes) |
| | ኄ | (numbers only, |
| | conc., | CAS No. |
| | soil | Chemical |
| | Initial | |
| | ENTER | ENTER |

| | * | MORE |
|------|---|-------|
| 15 | below grade to bottom of enclosed space floor, L _F | Denth |
| 15 | Depth below grade to top of contamination, L | ENIEK |
| 13.9 | Average soil temperature, T ₅ (°C) | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| below grade to bottom Depth below Average of enclosed grade to top soil space floor, of contamination, temperature, L. T. S. Soil vapor soil vapor k. | | | 7 L | Depth below grade to top of contamination, L, (cm) | Average soil temperature, T _s (°C) | Vadose zone SCS soil type (used to estimate soil vapor permeability) | OR . | User-defined vadose zone soil vapor permeability, k, (cm²) |
|---|--|--|-----|--|---|--|------|--|
|---|--|--|-----|--|---|--|------|--|

| 15 |
|------|
| 15 |
| 13.9 |
| SIC |

MORE +

ENTER
Vadose zone
soil dry
bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

ENTER
Vadose zone
soil organic
carbon fraction,
fev

(g/cm³) 1.5

(unitless) 0.43

(cm³/cm³)

(unitless)

0.002

ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs) Exposure duration, ED (yrs) 25 Exposure frequency, EF (days/yr) 250 ENTER
Target
risk for
carcinogens,
TR (unitless) 1.0E-06 Used to calculate risk-based soil concentration. ENTER
Target hazard
quotient for
noncarcinogens,
THQ
(unitless)

END

70

25

MORE ↓

ENTER

ENTER

ENTER
Averaging
time for
carcinogens,
AT_C
(yrs)

PAIDINO

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

YES

SL-SCREEN Version 2.3; 03/01

nter "X" in "YES" box)

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, C_R
no dashes) (µg/kg) Chemical

| ## ENTER ENTER ENTER ENTER ## Delow grade to bottom Depth below Average of enclosed grade to top soil space floor, of contamination, temperature, L _F L _L T _S soil vapor Soi | | | SIC | 13.9 | 15 | 15 | |
|--|--|----------------|--|---|---|---|------|
| ENTER ENTER ENTER Depth | User-defined vadose zone soil vapor permeability, k, (cm²) | O _R | Vadose zone SCS Soil type (used to estimate soil vapor permeability) | Average soil temperature, T _s (°C) | Depth below grade to top of contamination, L (cm) | below grade to bottom of enclosed space floor, L _F | • |
| | ENTER | | ENTER | ENTER | ENTER | ENTER Depth | MORE |

| END | | MORE - | | MORE - |
|--|---------|---|-------|--|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | ENTER Vadose zone soil dry bulk density, Pb (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{HC} (yrs) | 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, |
| | 250 | ENTER Exposure frequency, EF EF (days/yr) | 0.002 | ENTER Vadose zone soll organic carbon fraction, f (unitless) |
| Used to cal | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | П |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens THQ (unitless) | | |

DATA ENTRY SHEET

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. conc.,
(numbers only, Cano dashes) (µg/kg) Ch

| | | SIC | 13.9 | 15 | 15 | _ |
|---|------|---------------------------------------|---------------------------------|--|--|------------------|
| (cm²) | | soil vapor permeability) | (°C) | (cm) | (15 or 200 cm) | |
| vadose zone soil vapor permeability | OR . | SCS soil type (used to estimate | Average soil temperature, | Depth below grade to top of contamination, | to bottom of enclosed space floor, | |
| User-defined | | Vadose zone | | | Depth below grade | MORE ↓ |
| ENTER | | ENTER | ENTER | ENTER | ENTER | |

| | | MORE + | |
|-------|---|---|--|
| 1.5 | bulk density, Pb (g/cm³) | ENTER Vadose zone soil dry | |
| 0.43 | porosity, n ^v (unitless) | ENTER Vadose zone soil total | |
| 0.3 | porosity, 0,, v (cm³/cm³) | ENTER Vadose zone soil water-filled | |
| 0.002 | carbon fraction, $f_{\infty}^{\ \ \ \ \ \ \ }$ (unitless) | ENTER Vadose zone soil organic | |

| END | | | ₩ORE | |
|---|---------|------------------------------------|-------------------------------|-------|
| | 70 | carcinogens, AT _C (yrs) | Averaging time for | ENTER |
| | 25 | 2 | Averaging time for | ENTER |
| | 25 | duration, ED (yrs) | | ENTER |
| | 250 | frequency, EF (days/yr) | Exposure | ENTER |
| Used to calculate ri | 1.0E-06 | rs, | Target risk for | ENTER |
| to calculate risk-based soil concentration. | 1 | 20 | Target hazard quotient for | ENTER |

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box) YES

Version 2.3; 03/01 SL-SCREEN

CALCUIATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below) OR.

CAS No. (numbers only, no dashes) 129000 ENTER Chemical 2.60E+05 ENTER Initial soil conc., C_k (μg/kg) YES × Pyrene

space floor, ENTER Depth grade to top of contamination, Depth below ENTER 9 temperature, T_s (°C) Average soil ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability) ENTER OR vadose zone soil vapor permeability, User-defined (cm²) ENTER

MORE +

to bottom of enclosed (15 or 200 cm) 15 15 13.9 SIC

carcinogens, ENTER Averaging time for (yrs) ENTER
Averaging
time for
noncarcinogens,
AT_{NC}
(yrs) 25 Exposure duration, ED (yrs) ENTER Exposure frequency, EF (days/yr) ENTER 250 ENTER
Target
risk for
carcinogens,
TR (unitless) 1.0E-06 Used to calculate risk-based soil concentration. noncarcinogens, ENTER
Target hazard
quotient for (unitless)

DHI

MORE +

MORE +

ENTER
Vadose zone
soil dry
bulk density,

ENTER
Vadose zone
soil total
porosity,
n^v

Vadose zone soil water-filled

ENTER Vadose zone soil organic

porosity, θ, ν

carbon fraction,

(g/cm³)

(unitless)

(cm³/cm³)

(unitless) 0.002

0.43

0.3

END

1 of 1

CALCULATE RISK-BASED SOIL CONCENTRATION (enter "X" in "YES" box)

SL-SCREEN Version 2.3; 03/01

YES

OR

CREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below

CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

YES X

ENTER ENTER
Initial
Chemical soil
CAS No. Ca,
(numbers only, Ca,
no dashes) (µg/kg) Chemical

100425 9.70E+00 Styrene

| | | SIC | 13.9 | 15 | 15 | _ |
|---------------|----|-------------------|--------------|-------------------|----------------|------|
| (cm²) | | permeability) | (°C) | (cm) | (15 or 200 cm) | |
| ŗ | | soil vapor | Z, | ר | Ļ | |
| permeability, | OR | (used to estimate | temperature, | of contamination, | space floor, | |
| soil vapor | | soil type | soil | grade to top | of enclosed | |
| vadose zone | | SDS | Average | Depth below | to bottom | |
| User-defined | | Vadose zone | | | below grade | + |
| | | | | | Depth | MORE |
| ENTER | | ENTER | ENIER | ווארווא | המותא | |

| 1.5 | Vadose zone soil dry bulk density, Ph (g/cm³) |
|-------|---|
| 0.43 | Vadose zone soil total porosity, n' (unitless) |
| 0.3 | Vadose zone soil water-filled porosity, 0," (cm³/cm³) |
| 0.002 | Vadose zone soil organic carbon fraction, f (unitless) |

| END | | MORE |
|--|---------|---|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) |
| | Н | |
| | 25 | ENTER Averaging time for nopcarcinogens, AT _{NC} (yrs) |
| | H | . |
| | 25 | Exposure duration, ED (yrs) |
| | H | |
| | 250 | Exposure frequency, EF (days/yr) |
| Used to ca | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) |

| YES | CALCULATE RISK-BASED SOIL CONCE |
|---------------------|--------------------------------------|
| | ICENTRATION (enter "X" in "YES" box) |
| *EISIOII 2.3, 03/01 | SL-SCREEN |

OR

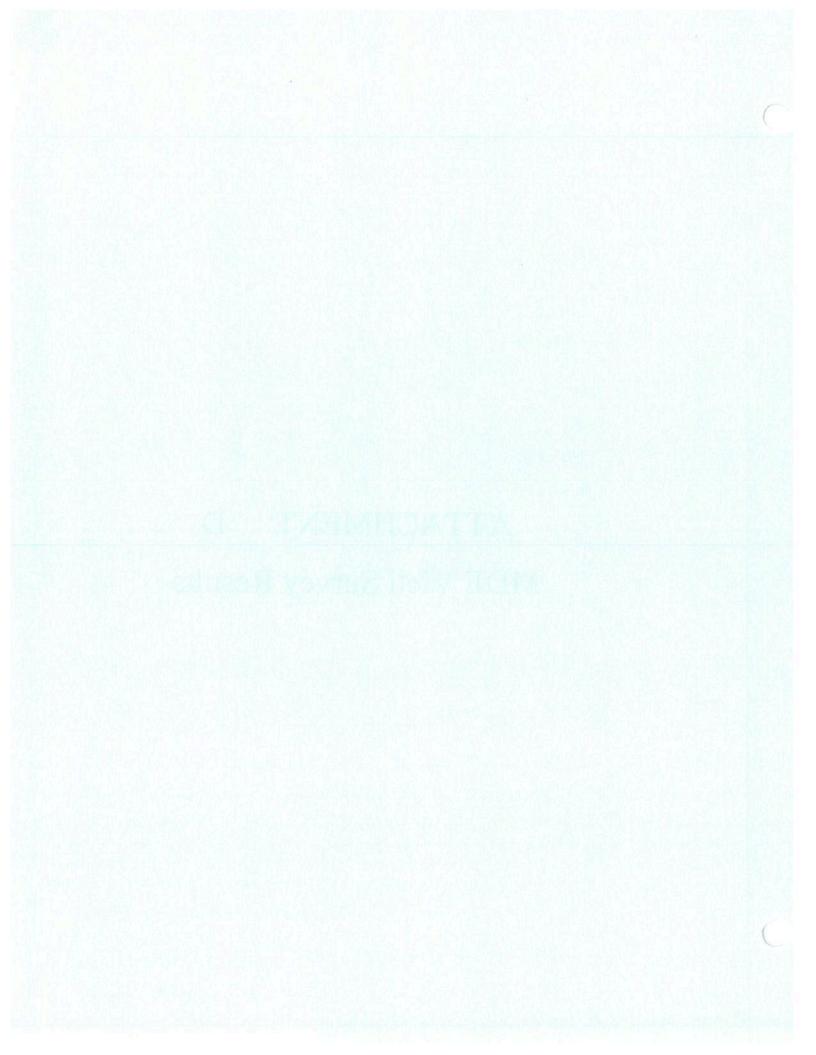
CALCULATE INCREMENTAL RISKS FROM ACTUAL SOIL CONCENTRATION (enter "X" in "YES" box and initial soil conc. below)

| | | II. |
|-------|----------|---|
| ENTER | 108883 | ENTER Chemical CAS No. (numbers only, no dashes) |
| ENTER | 5.10E+01 | ENTER Initial soil conc., C _R C _R (µg/kg) |
| ENTED | Toluene | Chemical |

| П | ₩ORE | |
|------|--|-------|
| 15 | Depth below grade to bottom of enclosed space floor, Lr (15 or 200 cm) | ENTER |
| 15 | Depth below grade to top of contamination, L, | ENTER |
| 13.9 | Average soil temperature, | ENTER |
| SIC | Vadose zone SCS soil type (used to estimate soil vapor permeability) | ENTER |
| | OR | |
| | User-defined vadose zone soil vapor permeability, k, (cm²) | ENTER |

| END | | MORE - | | MORE ■ |
|--|---------|---|-------|--|
| | 70 | ENTER Averaging time for carcinogens, AT _C (yrs) | 1.5 | ENTER Vadose zone soil dry bulk density, Po (g/cm³) |
| | 25 | ENTER Averaging time for noncarcinogens, AT _{NC} (yrs) | 0.43 | ENTER Vadose zone soil total porosity, n (unitless) |
| | 25 | ENTER Exposure duration, ED (yrs) | 0.3 | ENTER Vadose zone soil water-filled porosity, θ_w (cm³/cm³) |
| | 250 | ENTER Exposure frequency, EF EF (days/yr) | 0.002 | ENTER Vadose zone soil organic carbon fraction, to unitless) |
| Used to call soil co | 1.0E-06 | ENTER Target risk for carcinogens, TR (unitless) | | u |
| Used to calculate risk-based soil concentration. | 1 | ENTER Target hazard quotient for noncarcinogens, THQ (unitless) | | |

ATTACHMENT D MDE Well Survey Results



Page 1 of 9

ML. Well Database Search

Report Date:

2/12/2003

Search Area: Approximately Zero to One-Half Mile

Site Name: Site I

East Coord.: 685550

North Coord.: 575700



- Do not rely on the "Owner Address" field for the well location. This field is often the address of the property's developer rather than the actual address of the well location. Use the "Nearest Town" and "Nearest Road" columns along with a map to determine which wells actually are located within the search area.



| It is also groundwa | It is also recommended that groundwater use in the area. | It is also recommended that you contact the local health department, engineering department, or water authority to check what resources they have available concerning groundwater use in the area. | ina map to de gineering dep | artiment, or wat | wens actually er authority to | are focated w check what | ithin the search area. esources they have available concerning | <i>patab</i> 4 Decer |
|---|--|---|--------------------------------|--|----------------------------------|-----------------------------|--|-------------------------|
| Premit # | East Coord Owner | Окиет | = | Well Information | = | | | Subdivision |
| | North Coord Address | | | | | Screen | | Tax Map |
| | | City | Use of 16 Water Do | Use of Total Completion Casing Water Depth Date Denth | on Casing Depth | Yop/ | Nearest Road | Block |
| | | | | | | Bottom | nada coma. | Parcel |

Nearest Town

| | | | | | | | | 1.01 | ו מו כבו | |
|----------|------------------|--|----------|----|-----------|----|-------|--------------------|----------|-----------|
| FR816089 | 685000 | CHICKEN MAN 306 E. PATRICA ST EDETAGENCY | | 5 | 000 1/100 | 4 | 9 7 | | | |
| FR815037 | 684000 | | - | į | 0061175/0 | > | 12 21 | WATEK STREET | | FREDERICK |
| | 000016 | | F | 91 | 4/30/1987 | 15 | 91 | W PATRICK RT 40 | | FREDERICK |
| FR815038 | 684000 576000 | CHEVRON OIL COMPANY 1380 W PATRICK ST | | | | | 2 | | | |
| | | FREDERICK | - | 13 | 4/30/1987 | 2 | 12 | W PATRICK RT 40 | | FREDERICK |
| FR815039 | 684000 576000 | CHEVRON OIL, COMPANY 1380 W PATRICK ST | | | | | _ | | | |
| | | FREDERICK | F | 13 | 4/30/1987 | _ | 13 | W PATRICK RT 40 | | FREDERICK |
| FR815040 | 684000 576000 | CHEVRON OIL CO 1380 W PATRICK ST | | | | | 10 | | | |
| | | FREDERICK | T | = | 4/30/1987 | 10 | Ξ | W PATRICK ST RT 40 | | FREDERICK |

| | | BICK | *, | SICK | SICK | RICK | UCK | UCK | į |
|------------------|---|---|---|---|--|--|---|---|----------------------------------|
| | Nearest Town | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK | |
| Subdivision | Tax Map Block Parcel | | 418 7 7 7774 | | | | | | |
| | Nearest Road | W PATRICK ST RT 40 | CARROLL ST | EAST PATRICK ST | 350 E CHURCH ST | WATER STREET | WATER STREET | WATER STREET | |
| | Screen Top/ Bottom | 01 11 | | | 15 | 7 21 | 7 20 | 9 81 | 'n |
| | Casing Depth | 01 | | | 17 | 7 | 7 | 9 | |
| Well Information | Total Completion Depth Date | 4/30/1987 | * | | 9/10/1986 | 8/31/1988 | 8/31/1988 | 8/31/1988 | |
| Well | Total Depth | = | | | 28 | 21 | 20 | 18 | |
| | Use of Water | F | . + | F | ۲ | F | F | F | |
| Owner | Address | CHEVRON OIL CO 1380 W PATRICK ST FREDIERICK | FREDERICK TERMINAL 200 E SOUTH ST FREDERICK | FREDERICK GAS COMPAN 5513 TWIN KNOLLS RD COLUMBIA | MILLS TOM 5513 TWIN KNOLLS RD COLUMBIA | CHICKEN MAN 306 E. PATRICIA ST FREDERICK | CHICKEN MAN 306 E. PATRICK ST FREDERICK | CHICKEN MAN 306 E. PATRICK ST FREDERICK | CHICKEN MAN 306 E. PATRICK ST |
| East Coord | North Coord | 684000 | 684000 | 687000 | 687000 | 685000 | 685000 | 685000 | 685000 |
| , | # 1111111111111111111111111111111111111 | FR815041 | FR884238 | FR815876 | FR813574 | FR816090 | FR816091 | FR816092 | FR880076 |

| | s Program |
|--|--------------------|
| | ater Permit |
| The Party and Personal Property and Personal | 's Grounds |
| the character of contrast of contrast of | To MDE |
| SECTION SECTION ASSESSMENT OF THE PERSON NAMED IN COLUMN TWO IS NOT TH | III Others |
| Profession cases on Assessment | Refer. |
| Constitution of the Consti | t ve Outy |
| Barthille Highling reachestands in | I ERRP |
| AND SALES OF THE PARTY AND THE | r Interna |
| PROFESSION STATEMENT OF THE PROPERTY OF THE PR | February 12, 2003. |
| The same of the sa | Wednesday, |
| | |

| | | No. | į ž | ICK | CK | ſζĶ | CK | CK | CK CK |
|------------------|----------------------------|---|---|---|---|---|---|---|---|
| | Nearest Town | EDENEBICA | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK | FREDERICK |
| Subdivision | Tax Map Block Parcel | | b V H | | | 418 | 418 7 774 | 418 7 774 | 418 |
| | pac | E | in the | ST. | | | _ | | |
| | Nearest Road | WATER STREET | WATER STREET | EAST PATRICK ST | E PATRICK ST | CARROLL ST | SOUTH STREET | SOUTH ST | CARROLL ST |
| | Screen Top/ Bottom | s 21 | 4 61 | | 6 21 | | | | |
| | Casing Depth | ംഗ | | | 9 | | | | |
| Well Information | Completion Date | 12/13/1988 | 12/13/1988 | | 4/12/1983 | | | | |
| Well I | Total Depth | 15 | 61 | | 21 | | | | |
| | Use of Water | F | . μ | F | ۲ | F | ۲ | H | T |
| Owner | Address City | CHICKEN MAN 306 E. PATRICK ST FREDERICK | CHICKEN MAN 306 E. PATRICK ST FREDERICK | FREDERICK GAS COMPAN 5513 TWIN KNOLLS RD COLUMBIA | CROWN OIL & WAX CO 216 W PATRICK ST FREDERICK | FREDERICK TERMINAL 200 E SOUTH ST FREDERICK |
| J. Coord | North Coord | 685000 | 685000 | 687000 | 687000 | 684000 | 684000 575000 | 684000 575000 | 684000 |
| 7.5 | rermit # | FR880077 | FR880078 | FR815875 | FR810804 | FR884237 | FR884236 | FR884240 | FR884239 |

| | Nearest Town | FREDERICK | FREDERICK | CSX RAILROAD 8 FREDERICK 6 | FREDERICK | ILROAD FREDERICK | FREDERICK | ILROAD FREDERICK | LROAD |
|------------------|-----------------------------|--|--|---|--|---|---|---|--|
| Subdivision | Tax Map Block Parcel | 418 2 120 | 418, 2 120 | CSX RA 418 926 | 418 2 120 | CSX RAILROAD 418 FRED | | CSX RAILROAD 418 FREI | CSX RAILROAD |
| | | | | | | | | | |
| | Nearest Road | 306 E PATRICK ST | 306 E PATRICK ST | B AND O AVE | 306 E PATRICK ST | SOUTH ST | SAGNER AVENUE | WATER STREET | |
| | Screen Top/ Bottom | 5 | 5 25 | 10 20 | 5 25 | 71 | 1 4 | | |
| | Casing Depth | 2 | 80 | 10 | S | 17 | 2 | | |
| Well Information | Completion Date | 8/9/1994 | 8/10/1994 | 2/1/1996 | 8/10/1994 | 2/9/1996 | 4/15/1994 | | |
| Well In | Total Depth | 26 | 26 | 20 | 26 | 27 | 4 | | |
| | Use of Water | Т | F | ۲ | F | H | F | F | |
| Owner | Address | MDE 2500 BROENING HIGHWA BALTIMORE | MDE 2500 BROENING HIGHWA BALTIMORE | RUMMELKLEPPERANDKAHL 81 MOSHER STREET BALTIMORE | MDE 2500 BROENING HIGHWA BALTIMORE | RUMMELKLEPPERANDKAHL 81 MOSHER STREET BALTIMORE | PHOENIX INC 46 CARROLL STREET FREDERICK | RUMMEL KLEPPER AND K 81 MOSHER STREET BALTIMORE | RUMMEL KLEPPER AND K 81 MOSHER STREET |
| East Coord | North Coord Address City | 685000 | 685000 | 686000 | 685000 | 687000 | 684000 | 686000 | 687000 |
| Permit # | | FR884161 | FR884162 | FR884909 | FR884164 | FR884903 | FR883973 | FR884910 | FR884904 |

| | 1St Coord | Owner | | Well L | Well Information | | | | Subdivision | |
|----------|---------------------|---|-----------------|----------------|---|-----------------|----------------|---------------|-----------------------------|-------------------|
| rermit # | North Coord Address | | | | | 10 | Screen | | Tax Map | |
| | | | Use of Water | Total Depth | Total Completion Casing Depth Date Depth | Casing Depth | Top/ Bottom | Nearest Road | Block | Nearest Town |
| FR940087 | 686000 | FARMERS COOP ASSOC 35 E SOUTH STREET | | | | | s | | 418 | |
| | | FREDERICK | ۲ | 31 | 8/29/1996 | 5 | 29 | WISNER STREET | 656 | FREDERICK |
| FR940088 | 686000 574000 | FARMERS COOP ASSOC 35 E SOUTH STREET FREDERICK | F | 35 | 8/29/1996 | S | 30 | WISNER STREET | 418, | FREDERICK |
| FR940089 | 686000 | FARMERS COOP ASSOC 35 F SOUTH STREET | | | | | s | | 959 | |
| | | FREDERICK | F | 40 | 8/29/1996 | S | 30 | WISNER STREET | 959 | FREDERICK |
| FR940090 | 686000 | FARMERS COOP ASSOC 35 E SOUTH STREET FREDERICK | H | 40 | 9661/62/8 | S | 5 25 1 | WISNER ST | 418 | FREDERICK |
| FR884911 | 686000 | RUMMELKLEPPERANDKAHL 81 MOSHER STREET BALTIMORE | E | 25 | 2/7/1996 | 15 | 15 | WATER STREET | CSX RAILROAD 418 FRED | ROAD FREDERICK |
| FR883490 | 686000 | FREDERICK GAS CO 350 E CHURCH ST FREDERICK | F | 8 | 5/20/1993 | ∞ | » <u>«</u> | E CHURCH ST | | FREDERICK |
| FR940091 | 686000 | FARMERS COOP ASSOC 35 E SOUTH STREET FREDERICK | E | 35 | 8/29/1996 | S | 5 32 v | WISNER STREET | 418 | FREDERICK |
| FR880392 | 685000 | CHICKEN MAN 306 EAST PATRICK ST FREDERICK | F | 61 | 3/30/1989 | 9 | N 61 | WATER ST | | FREDERICK |

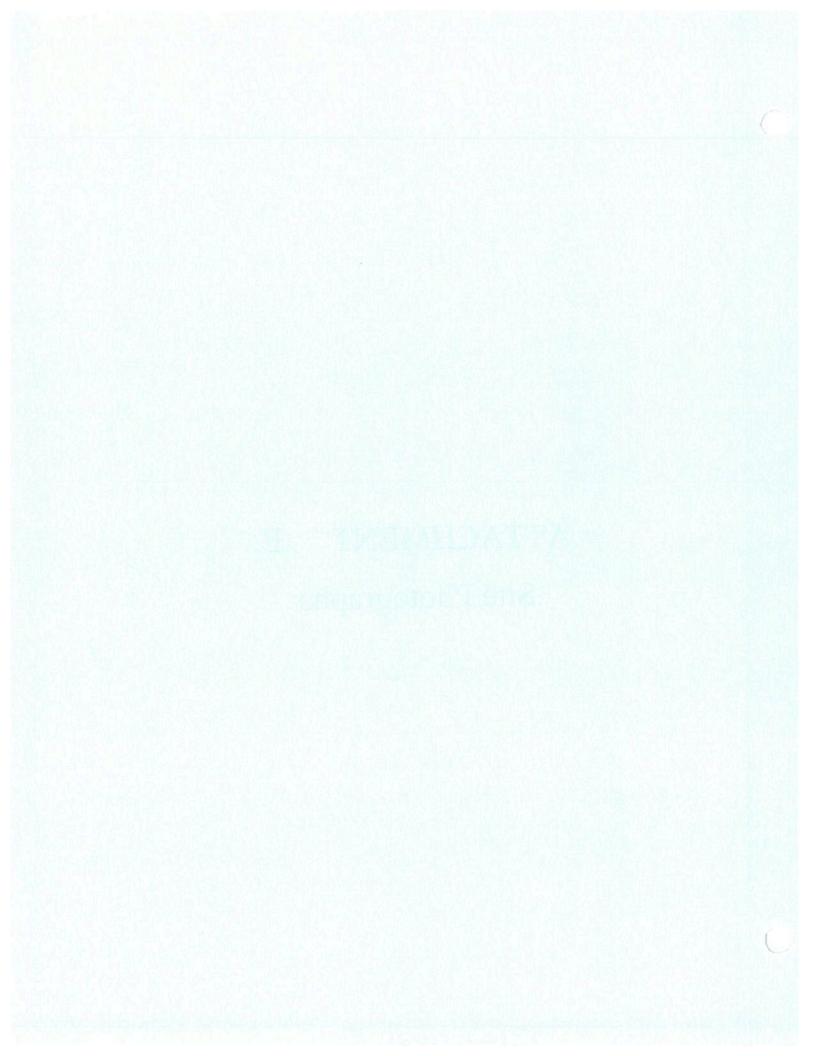
Wednesday, February 12, 2007 or Internal ERRP Use Only - Refer All Others To MDE's Groundwater Permits Program

| Subdivision | Tax Map Block Nearest Town | | FREDERICK | FREDERICK | FREDERICK FREDERICK FREDERICK | FREDERICK FREDERICK FREDERICK FREDERICK | FREDERICK | | |
|--------------|---|--|--|--|---|--|---|---|--|
| Nearest Road | | R ST | R S.T. | E CHURCH ST | URBANA PIKE | 306 E PATRICK ST | E CHURCH ST | SST | E CHURCH ST |
| | Screen Top/ Bottom | 4 16 WATER ST | 3 19 WATER ST. | 7 22 ECHU | 24 34 URBAN | 5 25 306 EP | 10 25 ECHUI | 7 19 WATER ST | 10 25 ECHUI |
| | Total Completion Casing Depth Date Depth | 3/31/1989 4 | 3/30/1989 | 5/20/1993 7 | 3/20/1992 24 | 8/10/1994 5 | 5/20/1993 10 | 3/29/1989 7 | 5/20/1993 10 |
| | 550 | r 16 | 61 | r 22 | 06 | . 26 | . 25 | 61 | . 25 |
| Care | Address Use of Use of Hater | CHICKEN MAN 306 EAST PATRICK STR FREDERICK | CHICKEN MAN 306 EAST PATRICK ST. FREDERICK T | FREDERICK GAS CO 350 E CHURCH ST FREDERICK T | BELL OIL 5922 URBANA PIKE FREDERICK T | MDE 2500 BROENING HIGHWA BALTIMORE T | FREDERICK GAS CO 350 E CHURCH ST FREDERICK T | CHICKEN MAN 306 EAST PATRICK ST FREDERICK T | FREDERICK GAS CO 350 E CHURCH ST FREDERICK T |
| East Coord | North Coord | 685000 | 685000 | 92000 | 685000 | 685000 | 92000 | 685000 | 976000 |
| Permit # | | FR880393 | FR880394 | FR883489 | FR882834 | FR884165 | FR883493 | FR880390 | FR883491 |

| Permit # | Coord | Owner | | Well In | Well Information | | | | Subdivision | |
|----------|-----------------------------|--|-----------------|----------------|---|-----------------|--------------------------|---------------|----------------------------|-----------------|
| | North Coord Address City | 1 Address Cig | Use of Water | Total Depth | Total Completion Casing Depth Date Depth | Casing Depth | Screen Top/ Bottom | Nearest Road | Tax Map Block Parcol | Nearest Town |
| FR883942 | 684000 | PHOENIX INC 46 CARROLL STREET FREDERICK | F | 15 | 4/12/1994 | 2 | 2 15 | SAGNER AVENUE | | FREDERICK |
| FR883943 | 684000 | PHOENIX INC 46 CARROLL STREET FREDERICK | F | 6 | 4/12/1993 | 7 | 7 6 | SAGNER AVENUE | (*) | FREDERICK |
| FR883944 | 684000 | PHOENIX INC 46 CARROLL STREET FREDERICK | F | 16 | 4/12/1994 | м | 3 | SAGNER AVENUE | | FREDERICK |
| FR883945 | 684000 | PHOENIX INC 46 CARROLL STREET FREDERICK | ⊢ | 0 | 4/14/1994 | я | 3 | SAGNER AVENUE | | FREDERICK |
| FR883972 | 684000 | PHOENIX INC 46 CARROLL STREET FREDERICK | F | 15 | 4/15/1994 | 7 | 2 2 15 5 | SAGNER AVENUE | | FREDERICK |
| FR883492 | 000929 | FREDERICK GAS CO 350 E CHURCH ST FREDERICK | F | 20 | 5/20/1993 | S | 5 20 E | E CHURCH ST | | FREDERICK |



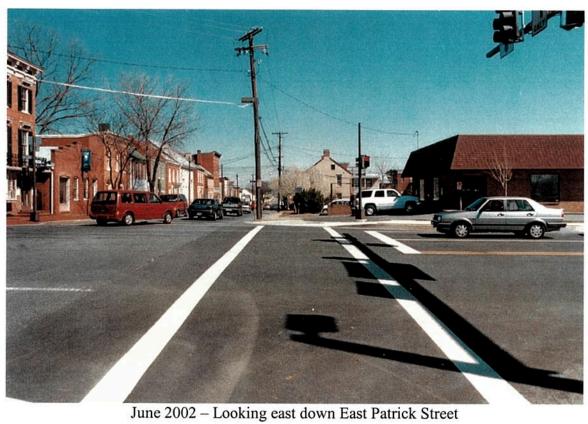
ATTACHMENT E Site Photographs







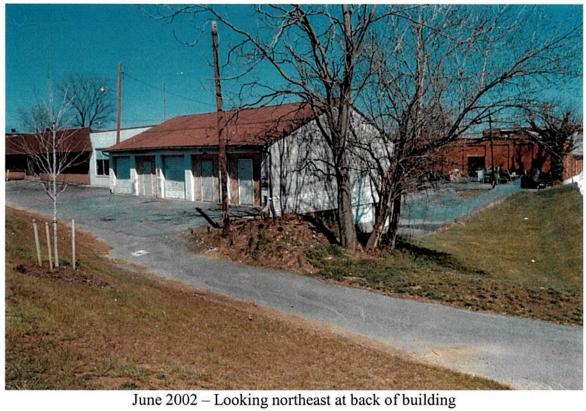
June 2002 – Looking South



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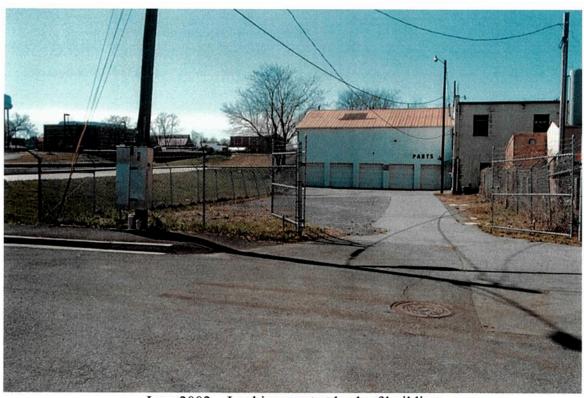


June 2002 - Looking north along East Street Extension





June 2002 - Looking northwest at back of building, stripping tower visible at right.



June 2002 - Looking west at back of building



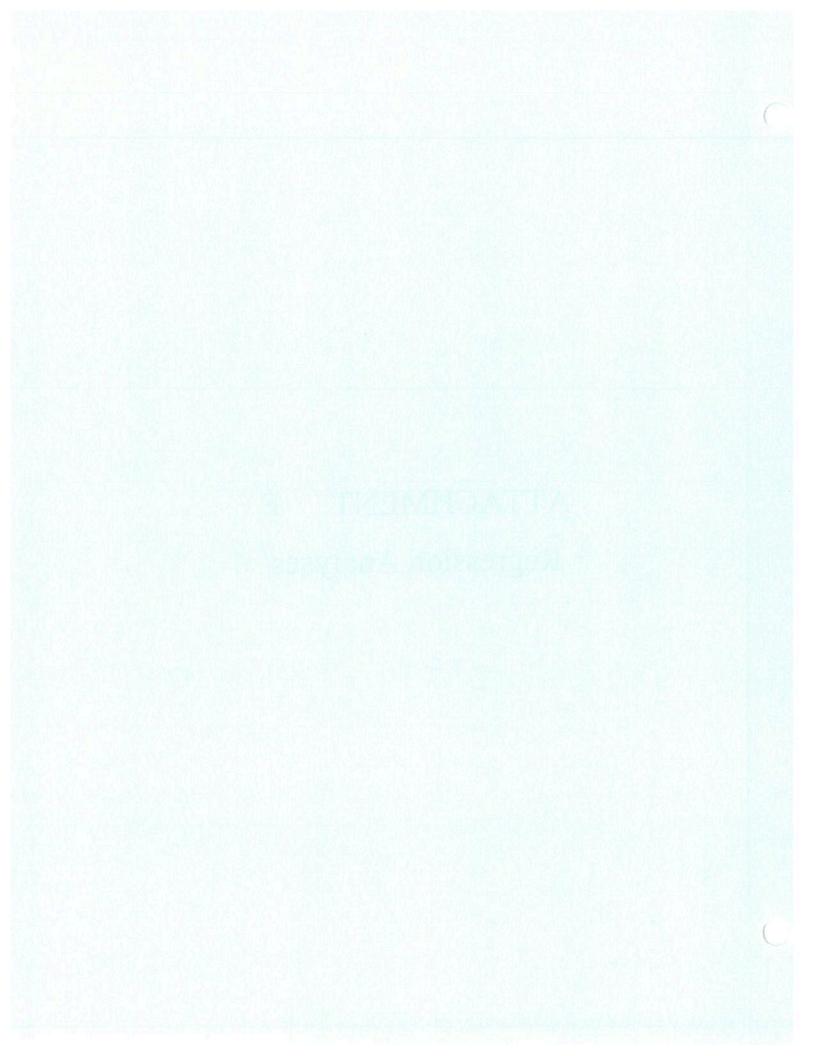
December 2002 - Looking west, drilling MW-1.



June 2002 – Looking north, drilling MW-1

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ATTACHMENT F Regression Analyses



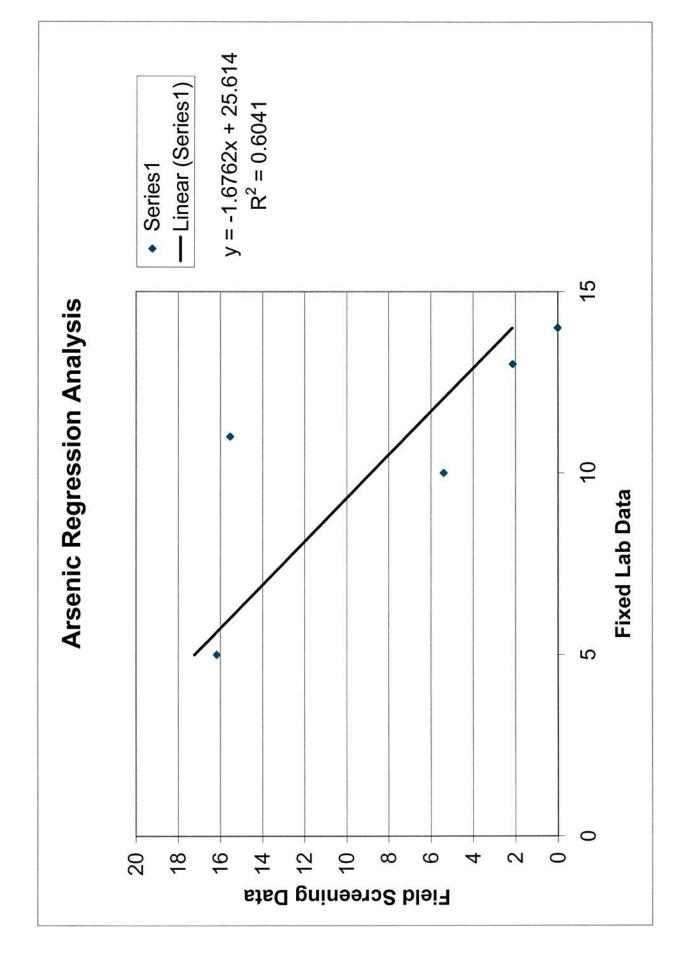
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Coincident Metals Data Frederick, Site I

| September 1 | | MARTEL | MARTEL | MARTEL | MARTEL | MARTEL | | |
|-------------|-------|--------|--------|--------|--------|--------|------|---------|
| Analyte | Class | FS-3 | FS-4 | FS-7 | FSS-4 | FSS-7 | Max | Average |
| Arsenic | Met | 5 | 11 | 13 | 14 | 10 | 14 | 10.6 |
| Beryllium | Met | 1.3 | | 0.82 | 1.2 | 1.2 | 1.3 | 1.13 |
| Cadmium | Met | 0.1 | 0.4 | 0.96 | 0.13 | 0.96 | 0.96 | 0.51 |
| Chromium | Met | 26 | 11 | 13 | 20 | 18 | 26 | 17.6 |
| Copper | Met | 21 | 39 | 41 | 23 | 65 | 65 | 37.8 |
| Lead | Met | 13 | 190 | 170 | 110 | 86 | 190 | 113.8 |
| Manganese | Met | 160 | 300 | 280 | 1000 | 1500 | 1500 | 648 |
| Mercury | Met | 0.27 | 1.5 | 0.62 | 1.1 | 0.71 | 1.5 | 0.84 |
| Nickel | Met | 24 | ND | 9.6 | 8.8 | 10 | 24 | 13.1 |
| Selenium | Met | ND | 1.9 | 0.77 | 0.6 | ND | 1.9 | 1.09 |
| Silver | Met | 0.4 | ND | ND | 0.17 | ND | 0.4 | 0.285 |
| Thallium | Met | 0.22 | ND | 0.29 | ND | ND | 0.29 | 0.255 |
| Zinc | Met | 54 | 190 | 250 | 73 | 270 | 270 | 167.4 |

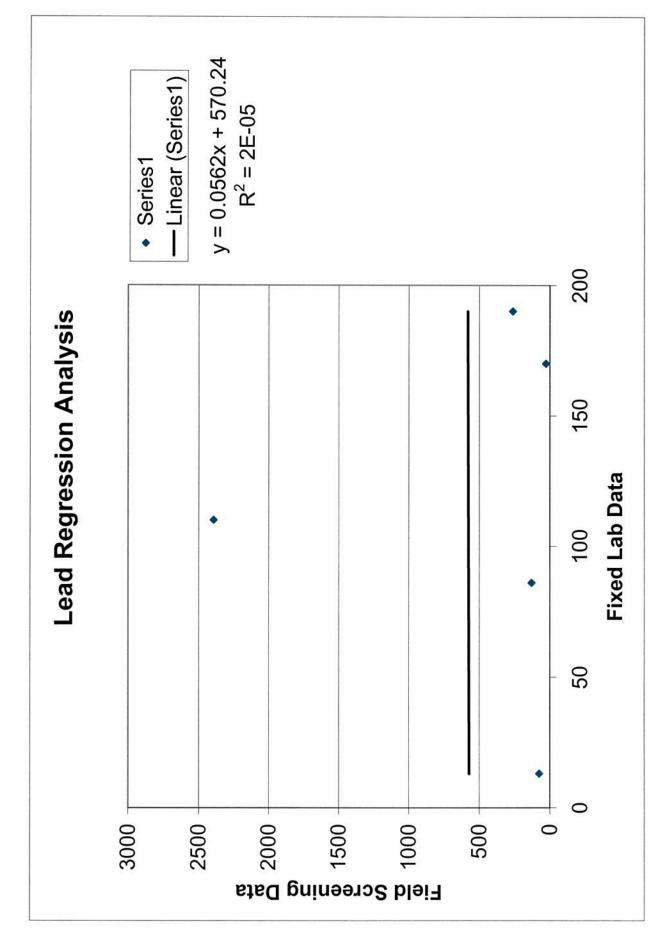
| | | Field | Field | Field | Field | Field | | |
|-----------|-------|--------|---------|---------|---------|---------|--------------|----------|
| Analyte | Class | FS-3 | FS-4 | FS-7 | FSS-4 | FSS-7 | Max | Average |
| Arsenic | Met | 16.17 | 15.542 | 2.125 | 0 | 5.393 | 16.17 | 7.846 |
| Beryllium | Met | NR | NR | NR | NR | NR | 25. 33231 NS | |
| Cadmium | Met | 0.46 | 2.742 | 0.486 | 1.688 | 1.148 | 2.742 | 1.3048 |
| Chromium | Met | 99.04 | 91.953 | 52.546 | 85.057 | 60.956 | 99.04 | 77.9104 |
| Copper | Met | 50.11 | 103.149 | 14.041 | 46.989 | 35.744 | 103.149 | 50.0066 |
| Lead | Met | 75.21 | 261 | 26.428 | 2391.59 | 128.964 | 2391.59 | 576.6392 |
| Manganese | Met | 461.29 | 653.082 | 175.307 | 1049.61 | 934.214 | 1049.61 | 654.6998 |
| Mercury | Met | ND | ND | ND | ND | ND | | |
| Nickel | Met | 18.57 | 54.539 | 8.897 | 32.813 | 16.336 | 54.539 | 26.231 |
| Selenium | Met | 0.71 | 1.652 | 1.109 | ND | ND | 1.652 | 1.157 |
| Silver | Met | 3.63 | ND | 1.623 | ND | 3.196 | 3.63 | 2.816333 |
| Thallium | Met | 0.55 | 0.232 | | 1.765 | 0.273 | 1.765 | 0.705 |
| Zinc | Met | 26.24 | 434.978 | 56.027 | 182.203 | 321.818 | 434.978 | 204.2532 |





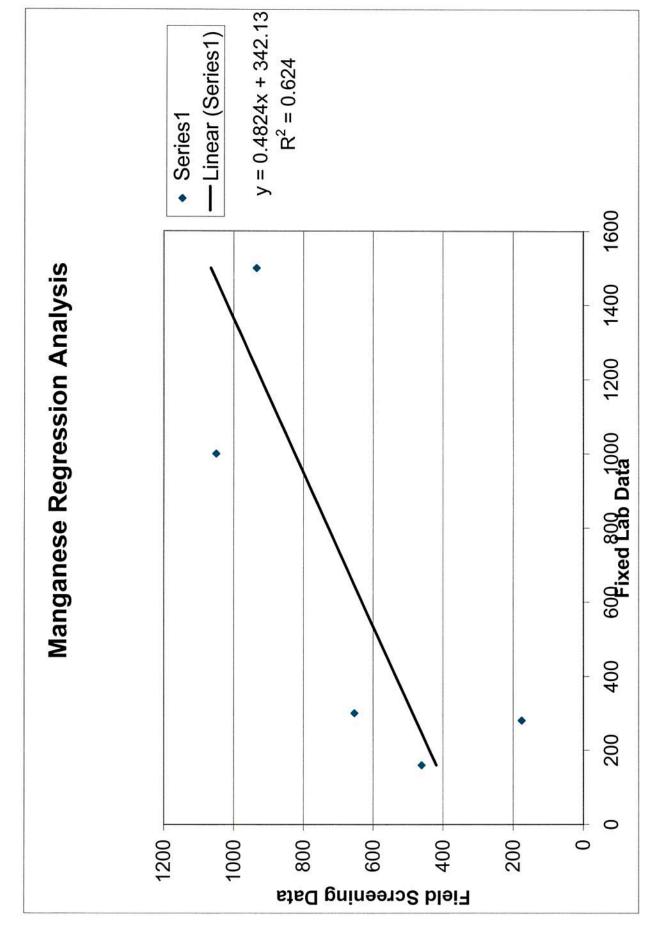
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